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ComputerWeekly

Thursday, May 13, 1982

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PO union to boycott Mercury

by Donald Kennett

POST Office Engineering Union members will be told not to connect any traffic from Mercury Communications' alternative telecommunications network through British Telecom's network or international links.

A circular from POEU secretary Bryan Stanley to all branches has given the call for action. The circular outlines the union's view of what it sees as three potential threats to BT's business: the licensing of the Mercury network; the opening of the market for network attachments and the proposed building of a new wideband cable network.

The union claims to have had some success already in persuading the government to restrict the terms of the Mercury licence, and it says it will continue to do everything possible to prevent or slow down its introduction.

But industrial action could prove counter-productive and should be used as a last resort, the circular warns.

The union says its members should urge BT to compete vigorously in both services and equipment supply by broadening the range and speeding up deliveries. More engineers should be drafted into the new sales force, it adds.

On the wideband cable network, the union argues strongly for a single integrated telecommunications and cable television network controlled by BT and installed by its members.

It urges BT to start planning this now, and says that BT should be quite capable of funding it by borrowing.

A study on the wideband network proposal is to be published by the union's research department in the next few weeks.

Other members of the British Telecom Union Commmittee – including the Union of Communications Workers, the Civil and Public Servants Association and the Society of Civil and Public Servants – are opposed to competition in network provision and particularly to what they see as the unfair competition in which BT's ability to invest is restricted by government policy.

BTUC secretary Alan Chamberlain said: "We wouldn't want to discuss our plans. We are waiting for the result of the discussions between Mercury, BT and the government. We will have to make a pragmatic decision when we hear what the terms of interconnection are."

The Association of Technical Scientific and Managerial Staffs, which had its attempts to represent BT staff rebuffed two years ago, is unlikely to become involved in industrial sanctions against Mercury.

SKINNER . . . . British-built micro

British-built micro is aimed at exports

by Robert Parry

LOOKING strongly to the export market, Egham-based Computer Ancillaries has broadened its product range with its own British-built microcomputer. It is called the Caltext Micro, emphasising the link with the company's existing Caltext word processing machines.

The Z80A-based micro, with 64K to 256K RAM, comes with floppy or hard disc drives built in. The basic twin 400K floppy system starts at £1,700, with a 15Mbyte hard disc version costing the end user less than £4,000, according to sales director Richard Pierce.

CAL specified the system, building on its experience with micro-based word processors, and has it manufactured under licence – by "a decent sized company" says Pierce. It is likely to be the start of a series of microcomputers from the company chaired by Ian Skinner.

"It is on the cards we will go to 16 bits", Pierce adds.

Shipments to end users will start by the end of June, selling through CAL's 30 established dealers.

ICL sets strategy for new machines

by Kevin Cahill

ICL this week formally announced the marketing strategy for its new top-end machine from Fujitsu. The comapny is expected to reveal the first two orders for the IBM-compatible computer system by the end of this month.

ICL is calling the giant machines Atlas 10 and Atlas 25 – recalling the name of the Ferranti range from the mid-Sixties.

Atlas 10 is the Fujitsu 380, with a mips rating of about 15. Atlas 25 is the Facom M382, the twin processor version of the 380 with a mips rating of about 25.

The machines will be sold with an operating system called Atlas OS, a superset of the IBM-compatible Facom OS 1V F4. The Facom operating system on which the Atlas OS is based was produced by Fujitsu specifically to counter what that company saw as IBM's attempt to lock in its customer base by "black boxing" the mainframe operating system MVS.

According to Olaf von Bülow, Atlas divisional director, ICL expects to sell five or six of the machines before the end of this year.

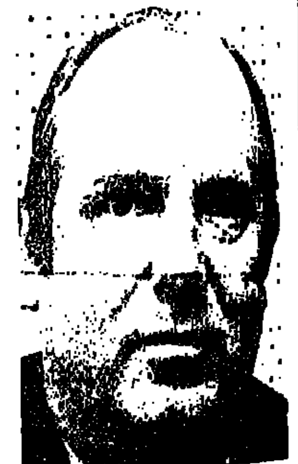
Order rate in 1983 is expected to be about one a month. The first two orders for the machines are due to be announced later this month and speculation centres around the Rutherford Laboratory and the Royal Air Force.

Each Atlas machine, complete with peripherals, costs about £3 million, and represents a 15% to 20% improvement on the price performance of the IBM offering in the 3081 range.

The Atlas range is air-cooled, unlike the IBM machines which are water-cooled. The Atlas 10 and 25 will complement ICL's existing 2900 Series mainframes and can be linked to them in data processing networks, ICL says.

Users see the introduction of the Atlas as paving the way for what ICL calls Estriel, which will fill the gap between the top end of the 2900 range and the Atlas. It is due in 1984/85.

First deliveries of the Atlas machines are due next summer, but earlier delivery looks possible as Fujitsu already has the machine in production at Numazu, outside Tokyo.



VON BULOW . . . ICL should sell five new machines this year

'ICL will break even in first half of 1982'

by Kevin Cahill

ANALYSTS EXPECT ICL to break even, or at most show a small loss, when it reports its six-month trading figures soon.

The consensus is that a loss would be in the region of £5 million to £10 million, or just about break even in the first half trading from October 1981 to March 1982.

ICL is expected to show a trading profit before interest and other charges of up to £13 million. The analysts expect this turnround on the basis of an order book which is between 15% and 22% higher than the first half last year.

There has been a substantial upswing in user confidence in the company, and a large increase in sales abroad.

But ICL is also thought to have fuelled the increase with aggressive pricing on the ME29, which has now sold nearly 2,000 units, and on the DRS and System 25.

The company has held its prices on the 2966, which is now approaching sales of 300 a year, and is on schedule for next year's target deliveries of 360 machines.

ICL has recruited additional shifts at two of its factories as a result of the increased orders. The shares rose about 10p last week as the predictions hit the market, and several financial institutions have taken up big tranches of ICL shares, in some cases as many as nine million shares.

The return of financial confidence in the company is widely attributed to the close contact maintained between ICL and the City.

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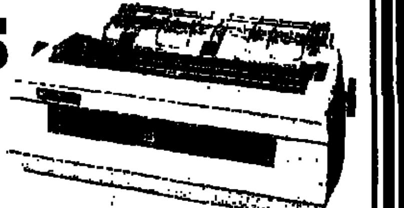

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Property problems hinder DP 'take-off'

by Andrew Thomas

LACK of suitable property is hindering the take-off of high technology in the UK. In a survey* carried out by Computer Weekly in conjunction with chartered surveyors Herring Son & Daw, and published today, 81% of the computer companies polled cited lack of space as the major factor causing them to look for new premises.

But 64% of these companies ran up against a lack of suitable buildings in all regions of the UK, particularly in the so-called "golden triangle" bounded by Heathrow Airport, Maidenhead and Farnborough.

The concentration of programming skills in this area – Hewlett-Packard comments that it is the greatest in the world – makes it desirable for any high technology company to set up an installation.

A quarter of the firms questioned had also encountered problems in obtaining planning permission for the type of facilities required – namely a mixture of office, light manufacturing, and research and development, in one building and in a location both attractive to the calibre of staff required, and close to air, road and rail links.

More survey findings and recommendations – Page 2

Leader comment – Page 13

There are different priorities for companies of various sizes. In the middle group (25-100 employees), importance of staff availability rises on a weighted basis to 54%, whereas worry about rental costs falls to below 30%. This group would also appear to be the fastest-growing in the poll, with fewer financial concerns than operational worries.

When asked what facilities they looked for in new premises, 39% of all the respondents listed transport facilities as their top priority, closely followed by staff availability (34%). Twelve per cent were concerned with suitable housing for their employees, and 9% were seeking a better environment.

More than half of the companies in the 25-100 employee category declared an interest in moving to a science park development, but less than one-third of the small and large companies considered this type of property desirable.

Only 15% expressed a desire to move to a development area. The most common reason was a reticence to move away from the areas of the UK traditionally rich in the experienced personnel required.

* *Property and Technology – The needs of Modern Industry.* Copies available free of charge from Herring Son & Daw, 26/28 Sackville Street, London W1X 2QL.

PUNTER . . . . Fired a number of salesmen.

Fraud Squad called in at micro house

by Boris Sedacca

INTERNAL strife has hit Microcomputerland, a self-appointed distributor in the UK for the IBM Personal Computer. And New Scotland Yard became involved early this week when its fraud squad was called in to question members of Microcomputerland's staff.

A number of salesmen have been fired by Mick Punter, who took over as managing director of Microcomputerland late last year. Punter had been managing director of troubled software house Zeus Hermes, and was involved in the recent sell-offs of the main subsidiaries of that company to the Enterprise group.

The company has purchasing links with Computerland in the US, which is an authorised distributor for IBM's Personal Computer. Punter denies the existence of other links including stock ownership, despite claims by sales director Doug Mudie when the company was first launched that it was a subsidiary of Computerland.

The problems at Microcomputerland illustrate the volatility of the market for "grey" imports of the IBM Personal Computer, which IBM has refused to announce in the UK despite the demand for it.

Microcomputerland was the first company to announce that it could get around IBM restrictions on exports of the Personal Computer through its links with Computerland, but since then other companies have jumped on the bandwagon.

One of these companies, KGB Micros, has to operate through two middlemen to get supplies. Sandy Sanderson, managing director of KGB Micros, says that he has had approaches from people who wanted to become dealers for the machine, but that the margins were too small.

"IBM's margins to its dealers are much lower than those offered by the other micro manufacturers. IBM UK have told me they were not happy about my selling the machine, but they have to ask themselves whether they would prefer the customer to buy an IBM grey import or a machine like the Sirius which is a strong competitor," he said.

Sanderson claims that far from jeopardising his chances of becoming a dealer when the Personal Computer is eventually announced in the UK, IBM is considering favourably his intention to become an official dealer.

'System 38 geniuses are scarce'

by Boris Sedacca

IBM has been caught off guard by the publication of a report which criticises its advanced-architecture small business machine, the System 38.

The report, System 38 in Practice, was published last week by Xephon, conference organisers specialising on IBM and its plug-compatible rivals. It precedes a briefing to be held this week by IBM at which four selected System 38 users were invited to relate publicly their experiences with the machine.

Seventeen out of 24 users interviewed by Xephon in the UK reported performance problems with the machine. And some users believe that IBM support staff do not understand their own systems.

Despite these drawbacks, says Xephon, most System 38 users like the machine.

Many of the areas highlighted for criticism by the report have since been improved.

Bob Swanston, group DP manager for Volvo Great Britain, says that good System 38 staff at IBM are light on the ground. "There are very few System 38 geniuses around. My impression is that they generally come from IBM Rochester where they had pre-release involvement with the machine before it was launched.

"Otherwise, I believe systems engineers get similar training to customers but without access to a production system like customers. However, we are extremely satisfied with our experience of the System 38 particularly with programmer productivity."

Michael Bradfield, a partner with Hospital Plan Insurance Services, added that the launch of Model 7 has got around the problem of inadequate performance on System 38.

NEWS BRIEF

Barclays in lead at 'DP Olympics'

FIRST heat of the 1982 Computastars competition was held at Crawley on Saturday. Winners of the team competition were Barclays International, with ESAMS taking the women's team prize.

Two teams tied for the veteran's number one spot – Legal & General and NPI; and Butterworth Publishers took the small units honours. A full report will appear in next week's issue.

UK still in race

REPORTS that India is to sign a £90 million contract for CIT Alcatel of France to build a telecommunications factory there do not necessarily mean that the UK has lost its bid to sell System X, according to the export consortium British Telecommunications Systems.

£115,000 grant

BRISTOL-BASED systems house UPS International is to get a £115,000 grant over four years under the Department of Industry software products scheme. The grant will cover 25% of the development costs for UPS' personnel administration package, System 90, which will have its first release in June.

Jobs saved

SERVICE business previously undertaken by Nexos is to be taken over by a new company, Nexel. It will service word processing equipment of the 3,000 customers who bought machines from either Nexos or Ultronic Data Systems (which Nexos bought) nationwide. The formation of the company, by a management buy-out, preserves jobs for 84 former Nexos employees.

New editor

CW names new editor

DAVID CRAVER took over as editor of Computer Weekly this week.

For the last year he has been with Computer Weekly as an associate editor. Previously he spent four years with a major computer manufacturer, four years as a senior executive with the trade association for the US paper industry, and two years as staff writer for the authoritative international newsletter Petroleum Intelligence Weekly.

Craver was born and educated in the US, where he graduated with a Bachelor of Arts from Trinity College, Connecticut.

He is 36, married and has two children.

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US software giant makes its micro debut

by Maggie McLening

MAJOR US software house ADR is to make its debut in microcomputer software. It will develop products for the Professional series recently announced by Digital Equipment.

Previously, ADR has concentrated on software for IBM mainframes, although the Applications Products Group has had a long-standing relationship with DEC in the US.

ADR is one of a number of big mainframe software houses which has fallen to the lure of micro.

"The fact that this is a joint venture means that it is really a natural progression for the Applications Products Group, because they have been working with DEC for some years," commented Nick Pollard, UK director of ADR.

Initially four products will be launched, one of which is a scaled-down version of ADR's Empire financial modelling system currently running on DEC VAX machines. This is to be known as the Empire workstation, and Pollard expects it to be used for connecting to a host VAX machine.

"In the past we have steered clear of micros as micros, and this policy will not change," he explained. "We are more interested in them as intelligent workstations, particularly with respect to word processing, because you can place some user friendliness in them, backed up by mainframe processing."

The three other products to be developed for release at the end of the year are ADR Data, for data management and manipulation using English language commands; ADR Graphics, a colour graphics package, and ADR Stats, for statistical analysis and forecasting.

Prices have yet to be announced, but Pollard confirmed that they will be within the normal bracket.

As a second stage, ADR is also looking at the IBM Personal Computer as another intelligent workstation for front-end processing. It could readily link with the bulk of ADR's current mainframe software, and forge further paths into the new market.

"The real difference for us is getting into the numbers game," explained Pollard, adding that he expected up to 100,000 units of the software would be sold during its first year.

POLLARD . . . . . "A natural progression."

European Commission plans legal database

by Donald Kennett

A COMPUTER database which can be accessed by all Common Market traders is being planned by the European Commission. It would cover EEC regulations, laws and court judgments.

A call for tenders for a study on the feasibility of the project has been issued by the Commission.

Proposals from software houses, management consultancies or information providers with specialised legal and trading expertise are asked to arrive by mid-September. Up to £140,000 is budgeted, with the work to be completed by April 1984.

Meanwhile, the London Chamber of Commerce and Industry has set up a database of export opportunities for UK companies. It includes calls for tender from the EEC, which can be worth £5 million a day and require bids within six days. The database, called Europort, is available on the Odyssey private viewdata system run by NVA Consultants on an ICL ME29. It can be accessed via 24 ports on the public telephone network by the 7,000 members of the LCCI, as well as 12 other UK chambers of commerce.

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PLESSEY PERIPHERAL SYSTEMS

TAYLOR . . . . . "US deal soon."

Nixdorf to sell UK voice system

by Philip Hunter

THE lead in office systems taken by UK company Office Technology Ltd with its introduction last year of spoken editing of text, is being consolidated. It is passing responsibility for marketing and development of the product in Europe to Nixdorf.

The agreement between the two companies concerns Imp, Information Management Processor, which OTL released last autumn with a facility for vocal annotation of text.

Other companies, such as Nexos, Datapoint and Nixdorf itself, had for some time been working on office systems strategies based on voice, but OTL pipped them at the post.

The licensing agreement allows Nixdorf to develop Imp to European specifications.

OTL managing director Spud Taylor said he expected to announce soon a deal similar to the Nixdorf one in the US.

Premises hard to find for electronics firms

by Andrew Thomas

"THERE is an inability to understand that electronics companies (a) exist, and (b) do not want warehouses with 10% office accommodation, even in the Thames Valley." So commented one Reading-based computer company in replying to the Computer Weekly/-Herring, Son & Daw property survey, published today.

"They always prefer to build warehouses with minimal office space and high ceilings, unsuitable for the electronics industry," was another typical reply.

The survey was commissioned to find out who "they" are and why they are unable to understand the need of high technology companies.

Two main problems were encountered by the 300 computer companies polled. The first is the conservative and outdated thinking of property developers and financiers, who are either unaware of the needs of today's industry, or are unwilling to take what they see as a risky step, and build anything other than the warehouse accommodation which is seen as a reliable route to profit.

The second stumbling-block preventing the expension of companies is the Town and Country Planning (Use Classes) Order 1972. Differing little from its 1950 predecessor, it outlines the type of uses to which industrial premises may be put.

The categories listed reflect the type of industry prevalent 30 years ago and, as such, exclude any reference to the high technology industries of today.

The computer industry needs a mixture of very light, clean manufacturing, research and development, and office accommodation, the survey says. With the current use classes, as soon as any manufacturing activity is entertained, the premises become "industrial", meaning a restriction to industrial estates where the buildings typically have high ceilings, poor communications, and are environmentally unattractive from the viewpoint of pollution from neighbouring factories.

The view was also expressed that the type of premises prevalent on industrial estates often discouraged the type of staff which the companies were trying to recruit.

Leases were also cited as posing problems by a number of firms. "Leases are too long for our industry," wrote one company, "The volatile nature of the technology and market requires constant change from us, and a 25-year lease places a cumbersome noose around our necks. We would be prepared to pay a premium rent for a shorter lease, say three to five years."

In its recommendations, the report says that a new use class should be introduced, to cater for a combination of office, research and development, light industrial and wholesale warehouse uses where none of these exceeds 50% of the whole.

Both universities and established industries have land which is in excess of their requirements. The report recommends that, in many cases, such establishments could be in a position to develop small, high technology estates.

NEWS BRIEF

Six new mainframes from NCR

NCR has released new medium and large scale mainframes, V-8500 Group II systems, offering price/performance ratio up to 25% higher than the V-8500M and MP processors they replace. Six models extend the performance range higher and lower than the current offerings.

The systems run under NCR's VRX (virtual resource executive) operating system.

£4m Philips deal

THE Dutch government has signed a contract with Philips to develop equipment and software for three office automation projects based on Philips' digital optical recording system. The systems will be used to handle and file mail, tax administration, and land and property data. Government departments will contribute Gld 9.5 million (£2 million) and Philips Gld 10 million (£2.1 million).

Marketing rights

COMPUTER Technology Ltd of Hemel Hempstead has signed an agreement with TRW, the Los Angeles-based corporation recently granted worldwide marketing rights for Convergent Technologies' networking worksrations, giving CTL exclusive marketing rights in the UK and Ireland. CTL will also gain access to proprietary system software provided by TRW for the Convergent products.

Ways into Japan

THE British Overseas Trade Board has updated its booklet Investment and Licensing in Japan. First published in 1973, it guides British companies into the Japanese market in other ways than by direct export, covering technological agreements, foreign investment and joint ventures. It is free from the BOTB.

Earnings slip

PRE-TAX earnings for the BASF Group slumped by 38% for the first quarter of 1982, down to Dm276 million (£64 million) from 1981 first quarter's Dm446 million (£104 million) on sales up 2.3%. Weakness in earnings by North American affiliates and a persistently unsatisfactory situation in commodity plastics were among principal reasons given for the fall.

CAD up 96%

LEADING CAD/CAM systems supplier Intergraph has reported net income of $2.5 million for the first quarter of 1982, up 96% on the same quarter in 1981.

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Pressure builds on IBM to fill mainframe gap

by Kevan Pearson

PRESSURE is mounting on IBM to launch a machine to fill the gap between its small and medium-scale mainframes. Last week BASF Computers launched its 7/68 machine based on Hitachi's M240H and National Advanced Systems has promised a similar product soon.

The 7/68 is rated at 2.5 million instructions per second (mips), compared to the 4341-2's 1.5 mips.

Industry analysts in the US predict that IBM will shortly follow suit with a machine topping out the 4300 range, though there are two options available to it. It could launch a more powerful version of the existing machines, "a 4351" according to Peter Labé, of New York market analysts Smith, Barney, Harris, Upham.

The other alternative, says Labé, is an attached processor version of the 4341, which would also offer about 2.5 mips.

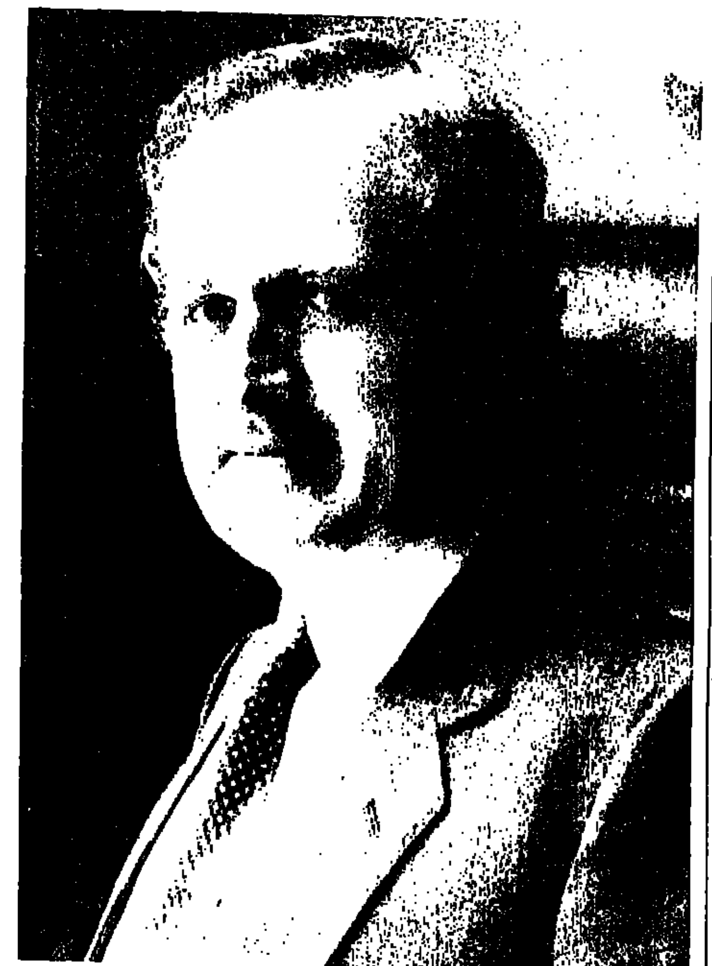
The BASF machine is a more powerful version of the 7/65 processor launched earlier this year. The 7/65 is field upgradable to the larger machine.

The new machine is available with eight channels, six of which support data streaming, necessary for the latest peripherals like IBM's 3370 disc drives. The 4341 has only two data streaming channels. Both machines can have up to 16 Mbytes of main memory.

National Advanced Systems is expected to launch its version of the M240H soon. NAS's machine will also be rated at 2.5 mips, but will have up to 16 channels.

An important element of the BASF announcement is the intention to support MVS/Extended Architecture (MVS/XA) IBM's large machine operating system on a 2.5 mips machine.

Nick Hollis, divisional manager of BASF's computer division, said he could not put a date on availability since IBM does not start deliveries of MVS/XA until 1983.



HOLLIS . . . No date on availability.

'France needs 500,000 microelectronics staff by end of decade'

by Jack Gee

THE French microelectronics industry will have a shortage of half a million staff by 1990 if the current rate of training is not speeded up.

And while the French domestic market is expected to double in size by the end of the decade, production in the electronics industry must increase two-and-a-half times if it is to be raised to an "international level".

These are two of the conclusions of the report by the special Electronics Channel Commission which the government set up to obtain guidelines for its ambitious five-year microelectronics plan. Details will be announced later this summer.

Abel Farnoux, former head of the European videocolor manufacturing venture for TV tubes, headed the Commission which calls for urgent efforts to catch up with foreign rivals in computers, components and automatic equipment for use in offices and the mass consumer market.

The report, the first to embrace all aspects of France's electronics industry, says that the domestic market will double by the end of the decade. "To raise French electronics to an international level, production must be multiplied by two-and-a-half."

The Farnoux Commission stresses that all sectors of the electronics industry are interdependent and urges the government to adopt a joint strategy to co-ordinate research, and international co-operation.

Training must be a top priority. France is presently producing only 7,000 computer and electronics engineers and 18,000 technicians a year. Twelve thousand, including 10,000 technicians, must be trained over the next 30 months, the report says.

The Commission urges the government to set up a Ministry for Electronics to co-ordinate all these efforts.

Welcoming the Farnoux report, Jean-Pierre Chevenement, Minister for Research and Technology, said: "New solutions must be introduced not only in preparing new workers for the industry but in providing continuous training throughout their careers."

IEE, polytechic start CAD/CAM projects

by Robert Parry

GOVERNMENT schemes to persuade British industry to use computer-aided design and manufacture techniques are beginning to take off. A data service for computer-aided engineering is being set up by the Institution of Electrical Engineers, and at the same time the EEC is funding a project at Teesside Polytechnic to establish how training courses can benefit end users of CAD/CAM.

The CAE data service will be run from the IEE library. It will provide information to support the Department of Industry CAD/-CAM and CADMAT schemes, from which it will derive its £500,000 funding over three years. The IEE database will include equipment information and a register of expertise, as well as an index of journals, books and conference proceedings in the relevant subject areas.

Software information will be provided in conjunction with the National Computing Centre in Manchester, to include NCC engineering software packages from the clearing house it is setting up under a contract from the Mechanical Engineering and Machine Tools Requirements Board.

The DoI's aim is that the data service should be a first step, leading people on to consultants or other specific sources of advice. Janet Tomlinson, information manager at the IEE and in charge of the service, reckons the database will be going in another six months, and is expecting anything between 3,000 and 10,000 enquiries a year.

As well as running the CAE data service, the IEE manages the CADMAT (computer-aided design, management and test) project for the DoI, and supports the Institution of Mechanical Engineers in running the CAD/CAM project. These two schemes will have £9 million and £6 million respectively of government money.

The Teesside Polytechnic project is funded by the EEC to the tune of £50,000. At the end of this month a re-training course for 12 qualified but unemployed engineers in CAD/CAM techniques wil finish at the polytechnic. The retrained engineers will be monitored until the pilot project ends in September to see how the course has benefited them and the companies they work for, if they find jobs.

Computer crime hits top DP companies

by Howard Karten

COMPUTER crime has been hitting close to home in the US. Minicomputer manufacturer Prime and Magnetic Peripherals, a subsidiary of Control Data, are both involved in US lawsuits after alleged tampering with their computer systems.

Prime Computer last week filed suit against EMC Corp, a privately held company in Massachusets, charging EMC with illegally obtaining Prime's confidential list of 2,600 customers.

Alleging misappropriation of trade secrets, Prime accuses EMC of illegally penetrating its computers and tapping its information. To investigate the situation, Prime salted its customer list with a phoney name. Shortly afterwards, Prime says, the dummy company began receiving sales material from EMC.

An EMC spokesman denies the charges. Richard Eagan, EMC president, said the company had bought its information legitimately through a list broker.

EMC produces computer memories compatible with Prime and another vendor's hardware.

In the case involving Magnetic Peripherals, an employee in MPI's purchase ledger department is accused of creating a bogus company in the name of a child who died at birth.

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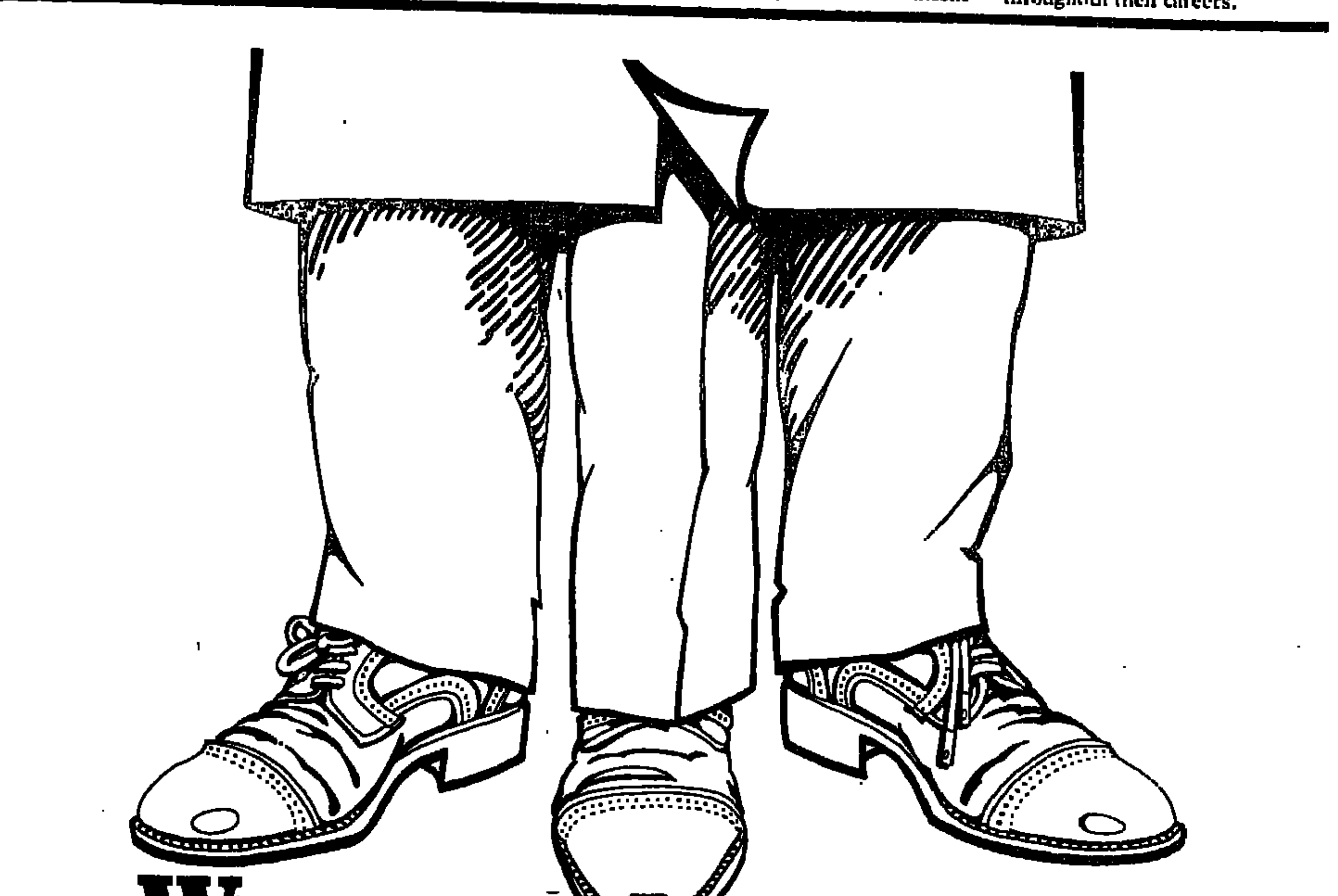

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Burroughs sells 1,600 B20s before launch

by Robert Parry

BACKING up its intention to reassert dominance in the small systems market, Burroughs disclosed that it had sold 600 of its micro-based B20 range in Europe by the time of the official launch last week. Most sales have been to established computer users, although about half are new users for Burroughs.

Some 1,000 systems have been sold in the US.

The first sales will set the trend for the company's main marketing efforts. Burroughs will play on the theme that the B20 is a proven product, with established hardware and stable software. It will be available in the UK next month.

Hardware for the 16-bit B20 range, based on Intel processors, comes from California-based Convergent Technologies. The hardware already appears in other guises – such as a word processor from NCR. Burroughs has 85% of Convergent's output, a seat on the board since signing the OEM deal last October, and manufacturing rights for the machines, which it is likely to exercise to gain the security of a second hardware source.

The two initial models in the range, B21 and B22, are aimed very much at distributed computing applications in large companies. The 8088-based B21 comes in at less than £7,000 for an integrated unit with 256K RAM and five megabytes hard disc store with floppy back-up. For a system with three more workstations and 384K RAM, the price will work out to about £4,000 per workstation.

The heftier B22, using the 8086 processor, offers more RAM and mass storage memory along with increased display facilities and a Multibus slot added to the standard RS232, RS422 and Centronics printer interfaces.

Software is based around Burroughs' own BTOS operating system, which will look familiar to users of larger Burroughs machines, says Charles Posnett, marketing manager.

POSNETT (left) and RUSHTON . . . Looking to a new direction for Burroughs.

With the B20 range, and the OFIS electronic office system which will be able to use the microcomputer as a terminal, Burroughs sees itself moving out of the "computer business" and into the "information industry" says UK managing director Laurie Rushton.

Burroughs will open a Computer Business Centre in London around September, when the CP/M operating system should be available on the machine, says Posnett.

ROBINSON . . . . "Strength in documentary credit facilities".

International banking move by GCS

by Boris Sedacca

GENERAL Computer Systems, whose directors recently bought out the controlling stake in the company previously held by the US-based Telex Corp has acted swiftly to maintain its market momentum by moving into international banking. It has launched a system with strong word processing facilities for international documentary credit operations in banks.

Competitiors in the market for international banking systems currently include software houses like Arbat, Hoskyns, BIS, and Altergo, as well as the traditional hardware manufacturers such as Burroughs, NCR and Nixdorf.

No system covers every aspect of international banking operations and according to marketing director, Peter Robinson, GCS sees its competitive strength in banks which have a high volume requirement for documentary credit facilities.

The company's GCS 222 international banking system is based on hardware from Qantel.

GCS is hoping to get an early UK reference site with the Midland International, which Robinson claims is at an advanced stage of evaluation on the product.

UK micro makers into 16-bit systems

by Robert Parry

UK MICROCOMPUTER manufacturers have been quick to make the move into the 16-bit arena. Following the increasingly well-trodden path to high-performance business micros, Britannia Computers of Dudley has taken Motorola's 68000 processor running a Unix-like operating system to provide flexible microcomputer systems to meet customers' price and performance criteria.

The Britannia Series 3 joins several recent arrivals like the American Fortune 32:16 and the Charles River Universe 68 machines, and the British IMP 68, all of which are pitching for a significant market share.

Britannia's machine is based on the IEEE 696 (S-100) bus, giving flexibility in original configuration and field upgradeability. Systems run from single user, five-megabyte hard disc storage units for less than £6,000 to 16-user systems with 140 megabytes of disc. Up to 18 RAM boards, giving eight megabytes of internal memory, can be fitted.

Sales and marketing director Geoffrey Sheridan says that Britannia is thinking of expanding the multi-user capability to 70 or 80 screens off one processor, and that the system will have Ethernet local networking capability.

"With Ethernet you could go up to 1,600 users on linked systems," says Sheridan, "if you'd want to." The networking hardware is available, but Britannia is still involved in producing the software to implement it.

The operating system for the machine is Idris, the derivative of Unix from Whitesmiths, a choice arising out of what Sheridan sees as the necessity for multitasking and multi-user operation.

Opportunities for new DP firms 'never better'

by Boris Sedacca

OPPORTUNITIES for new computer companies to come on the market with competitive products have never been better.

Start-up companies wishing to build small computers can choose from competing ready-made architectures, and have many advantages over their predecessors of a decade ago.

But this "window of opportunity" will be closing by the mid-1980s, warns William Zachmann, director of research at International Data Corporation's US headquarters.

Speaking at IDC's 1982 European Computer Industry Briefing Session last week, Zachmann said that new companies could come into the market with low capital investments and build a computer out of a basic "tool-kit".

Such tool-kits comprise off-the-shelf semiconductor logic and memory, bus structures, disc storage and peripherals, modems and software from which systems builders configure systems cheaply.

"There will be new companies which start up and carve up substantial market shares. On the other hand there will also be companies which start up but eventually get pushed aside.

"Dramatic changes in system architecture are waiting in the wings. By the end of the decade we will be looking at totally different architectures," he said.

Zachmann contrasted the architecture of the 32-bit Intel iAPX 432 microprocessor three-chip set against that of IBM's top-end mainframe, the 3081. Although the iAPX 432 had only 16 Mbytes of real memory against 32 Mbytes on the 3081, it could address one million megabytes of memory against 2,000 on the 3081.

Data Type sets up US operation

by Sarah Hardcastle

DATA TYPE, the South Wales microcomputer and peripherals company, has established a US operation to manufacture and market its graphics products. This is Data Type's latest phase in a programme of planned expansion, made possible by substantial funding last November from Citicorp Development Capital's high technology finance scheme.

The US subsidiary in Mountain View, California will manufacture graphics boards for Data Type's Autograph range based on the Televideo terminal. The boards convert the Televideo into graphics terminals compatible with the Tektronix 4000 series.

A distribution network for the Autograph range and subsequent graphics products is being established.

Avery Blake, former vice-president of MQI Computer Products has been appointed president of the subsidiary. MQI until recently manufactured Data Type's graphics boards in the US.

Gerry Tuffs, chairman and managing director of the Data Type group said: "We feel that there is a considerable market for our computer graphics products in the US and to build on our initial success we had to have our own local operation."

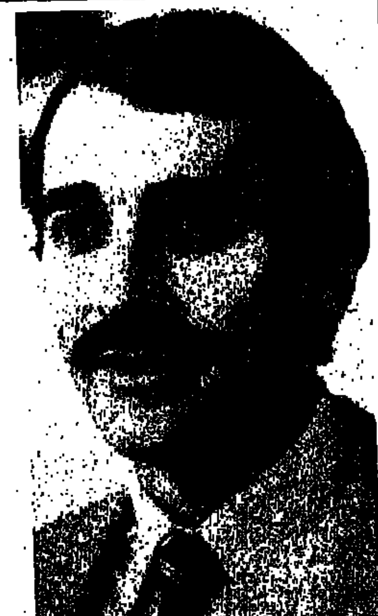
Setting up the US operation will absorb the remainder of Citicorp's £400,000 funding originally awarded for research and development. Data Type has directed a large portion of this sum towards a planned series of European acquisitions designed to extend its marketing outlets on the Continent. It bought German OEM terminal supplier Teledynamics for £500,000 in January, and has two further acquisitions in the pipeline.

Negotiations for a Dutch company are still in progress while acquisition of a Swiss terminal supplier is within two weeks of completion, said Tuffs.

With the option of additional finance from Citicorp, Tuffs anticipates one more acquisition by next year.

Further graphics products are planned, with a low-cost graphics range, offering colour for the business user and high resolution for engineering and scientific applications to be released at the National Computer Conference in the US this summer.

A terminal with an Arabic character set for the Middle East market is also under development.



TUFFS . . . . More acquisitions.

Summit conference shop window for French viewdata

by Jack Gee

FRANCE is seizing the opportunity of the Western Economic Summit at Versailles to demonstrate the potential of its computer terminals and viewdata equipment.

Diplomats and journalists attending the meeting from June 4 to 6 will operate interactive Teletel and the broadcast Antiope system.

They will be linked by a network of 250 terminals at the Versailles Palace and hotels throughout the Paris area.

The French government has put a team of 30 to work since January to ensure that the summit of the 24 member countries of the Organisation for Economic Co-operation and Development is an original shop window for France's telematics products.

Over 100 technicians will supervise and maintain the computers and other equipment.

Teletel will provide access to a number of databanks including facts and figures on the countries taking part in the meeting. An electronic telephone directory will supply the numbers of all delegates attending.

Mrs Thatcher and other heads of state will be able to consult their delegations over the computer network and use facsimile machines as an electronic mailing service.

Antiope will offer a 60-page "summit newspaper" in English and French, edited by six full-time journalists. The newspaper will include world Press reviews, official announcements and weather forecasts.

On Teletel 8,000 pages of information can be accessed in both languages. Alain Rey, a senior organiser of the Versailles viewdata venture, said: "The most exciting aspect is that Teletel, Antiope and electronic mailing are being used together for the first time at an international conference."

Versailles is closely involved in a local community test for Teletel now under way in the Southern Paris suburbs. Based in neighbouring Velizy, the experiment involves 2,200 homes where interactive terminals have been installed by the French Telecommunications Authority.

French Telecom makes no secret of the fact that it regards its operating display of telematics equipment for the leaders of the Western world as an occasion to conquer new export markets.

SALES BRIEF

Oxfordshire invests in the DRS-20

OXFORDSHIRE County Council has ordered ICL DRS-20 networking microcomputers worth £350,000 to provide both local computing facilities and teleprocessing from sites throughout the county.

Over 50 Model 10 workstations are included in the order, as well as a number of Model 40s and 50s – the floppy and hard disc based models. They will run previously developed applications in Basic and CIS Cobol, as well as accessing ICL 2972, 2903 and 2904 mainframes and minis in various council departments.

£1m orders

COMPUTER Technology has won the fifth major order for its Momentum non-stop dual processor based system, bringing the total value of the orders to well over £1 million. The latest order has come from electrical wholesalers Whitworth Electric, which will use it with 75 terminals in its 11 branches to process orders, check credit and produce picking lists and despatch notes.

First UK sale

DATAPOINT has made the first UK sale of its top-of-range 8800 mini to Chorley-based Leyland Paint & Wallpaper to provide invoicing, sales accounting and stock evaluation facilities on its existing Datapoint ARC local network. Costing £100,000, the 8800 has 500 Kbytes of RAM and 202 Mbytes of disc storage.

Banking on Philips

PHILIPS has won a second major order for PTS6375 300-character-per-second printers from the Royal Bank of Scotland. The order, worth £1.64 million, is for 600 back office printers to log all the branch accounting transactions carried out on the IBM 3600 branch automation system which is currently being installed in its 500 branches.

500 printers

ESHER-BASED printer supplier Northamber has ordered 500 Mannesmann Tally MT100 series printers, which are aimed at microcomputer and small system users. Most of the 500 will be 80-column 160 character-per-second devices, but 132-column and 100-chps models will be included.

Building up

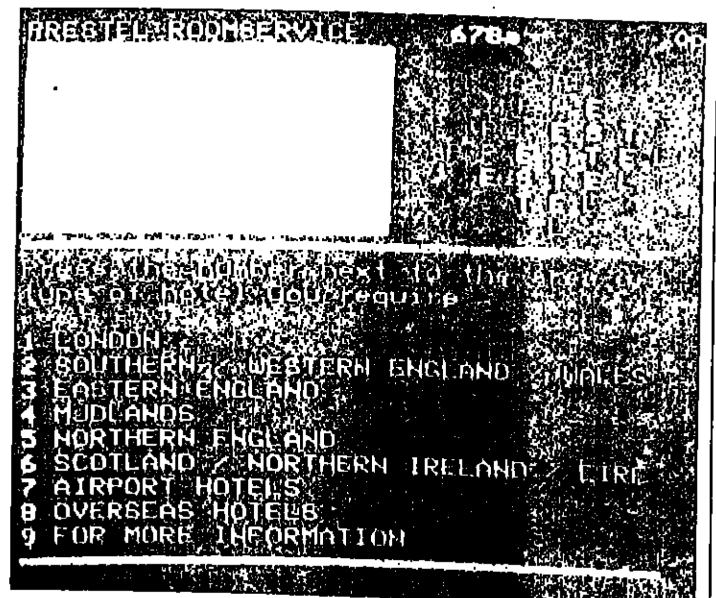
NIXDORF has gained the first building society order for its 8864 distributed financial system. West Bromwich Building Society is to install systems in five branches initially and another 20 within a year to support enquiries from its mainframe.

Serck success

COVENTRY-BASED Serck Controls has won six orders, totalling over £5 million, in the last four months. One of them, worth £2 million, is a hierarchy of minis and micros to control a Shell Expro gas processing plant in Scotland. The others are all for export – to Denmark, Borneo, Abu Dhabi, Oman and the USSR – for various control and telemetry applications both onshore and offshore.

DHSS system

SALFORD Health Authority is installing the WIMS works information and management system developed by the Department of Health and Social Security and sold under licence by Woking-based ABS Computers. The system will run on an ABS MX mini, producing energy management analyses and job tickets for maintenance work on its hospitals, health ambulance stations and centres.



Prestel's Roomservice allows users to look up hotels by their location.

Prestel launches hotel booking service

by Donald Kennett

PRESTEL is fulfilling its promise to make the service easier to use, and to provide more industry specific applications. A new hotel booking service has been launched with a master index which allows users to look up hotels by their location.

The booking pages themselves will continue to be set up by information providers, which include large hotel groups, travel companies or publishing houses, but the difficulties of working out how to find them have been overcome.

Prestel itself is providing the index, called Roomservice, and is backing it with a printed directory to be sent twice a year to all Prestel users. It is also making the service more available to small hotels by offering a minimum insertion of two pages – an amenities page and a booking page – for £50 a year.

The new index is the first manifestation of the policy devised at the viewdata and teletext "commitment conference" organised by the Department of Industry in February, where the need was stressed to re-think industry activities so as to meet users' requirements.

In the last six weeks the number of hotels bookable through Prestel has jumped from 400 to 1,000, and the level of bookings is running at 400 to 500 a week. Several large chains have joined the service, but the arrangements for small hotels are expected to contribute to a continued steady growth.

Rooms can be booked in the UK, Europe, the US, Canada, the West Indies and Mauritius.

To help prepare its attack on the residential market, Prestel has retained the new product development agency Clayton Lodge & Knight which specialises in fast-moving consumer goods.

Tandem aims at office systems market

ELECTRONIC mail and facsimile transmission are to be supported by non-stop mini manufacturer Tandem Computers in a bid to tap the office systems market.

A new Transfer software module has been designed to form the core of a new set of information "delivery mechanisms," of which electronic mail and facsimile transmission are the first two.

Transfer, costing £7,200 and available in April 1983, will support a range of protocol conversion operations which will enable third party equipment makers and systems houses to implement links for Tandem-based fault tolerant networks. Existing converters, such as those that support IBM terminals, can be used with the Transfer software.

Tandem's distributed processing networks are built on the "backbone" of its Expand networking software, which can link up to 255 geographical locations in a fault tolerant network. "Transaction management," provided by its Encompass teleprocessing and report writing products, and "gateways" provided by Transfer and its add-on modules, are the other elements of what it calls its "corporate information resource."

Linked with Transfer are a £9,300 facsimile controller and £1,400 Transfer/Fax software which allow users to integrate CCITT Group I and II (six minute and three minute) facsimile transceivers into their networks.

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'British standardisation efforts doomed to failure' – report

US bid to take over viewdata, teletext

by Donald Kennett

THE US is attempting to adopt viewdata and teletext as its own, at the same time rejecting the pioneering UK efforts.

The evidence comes from three sources: The American National Standards Committee has set up a working group on viewdata and teletext character sets; American Telephone and Telegraph continues to be obstructive in international discussions on standards; and a US market research company has published two recent reports attacking British standardisation efforts.

The attacks came from Connecticut-based International Resource Development, which has criticised the British Teletext Industry Group's submission to the Federal Communications Commission and said that any pre-planned national public viewdata service such as Prestel was doomed to failure.*

The attacks were based on the relative simplicity of the current UK teletext and viewdata services. They ignore that methods of enhancing these services with line graphics and photographic images have been agreed in outline by broadcasters and telecommunications interests in the UK and in CCITT (the Consultative Committee on International Telegraphy and Telephony).

The US and Canada are members of this body, but are possibly too used to seeing initiatives in telecommunications come from North America to be able to adapt readily to one coming from Europe.

A by-product of AT&T's disruptive contribution to the standardisation of viewdata in May last year was to draw attention to the International Standards Organisation's seven-layer model for Open Systems Interconnection (OSI). Until then it had not figured in the rivalry between the UK, France and Canada because it had not been proposed when they designed their systems. The model is still incomplete, but appeals to use it in the development of live systems are increasing.

Viewdata users are prime candidates, since the basic concept of viewdata is to allow easy access to a wide range of information services by a large number of users, using common equipment and procedures.

Presentation Layer, the second layer of the model, which describes the character sets, formats and display attributes that a terminal should be capable of handling and the codes that should be used in communicating them, has now been taken up by the American National Standards Committee X3L2.1. It expects to complete a draft standard in conjunction with the Canadian Standards Association at their next joint meeting in June.

The committee emphasises that the participants are technical people, and political speeches will have no place at their meetings.

* Videotex Business Applications Markets, $1,285, 136pp, and Videoprint Newsletter, International Resource Development.

CDC asks for unpaid holidays

by Howard Karten

CONTROL Data Corporation, the latest company to be hit by the US recession, last week asked employees to volunteer for time off without pay. The Minneapolis mainframe manufacturer is seeking some 700 volunteers among its 48,000 domestic workforce to take unpaid holidays ranging from 60 to 90 days.

A CDC spokesman said other options, including the possibility of lay-offs if too few volunteer, were being considered. The last time CDC laid off employees was during the 1974 recession.

There are no plans to extend the voluntary programme overseas.

CDC reported a first quarter profit after tax of $31.1 million, compared with $46.4 million in the quarter ending March 1981.

CDC announced last week that it was shutting its 13 Magnetic Peripherals Inc plants for four to 12 days during the summer, to take inventory. MPI's 9,500 employees will be asked to take their vacations during that time. The move was attributed to a slowdown in orders.

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TEXAS INSTRUMENTS LIMITED

*Trademark of Digital Equipment Corporation

Late launch by Grundy for 'briefcase' micro with expanded memory

by Robert Parry

AFTER two years of false starts, the NewBrain microcomputer is ready for the crowded desks and briefcases of the modern businessman. Business, scientific, and educational markets will be Grundy Business Systems' main target.

The company sees the small size and large capability of NewBrain as a winning combination.

NewBrain packs a Z80A processor with 32K of RAM and 29K ROM into a box not much bigger than its typewriter-style keyboard. The first models offer a built-in 16-character display. Expansion units, which can be clipped on to the bottom of the NewBrain, allow memory to be increased to two Mbytes.

The NewBrain uses power switching techniques rather than expensive CMOS, and the resulting low power consumption enables it to run as a battery-driven portable computer. Add-on battery modules will be available from the summer, and a model with in-built rechargeable batteries will follow.

It will preserve memory for up to 20 hours, making the machine useful for taking programs from place to place.

The basic NewBrain starts out costing about £200, but by the time it is built up into what marketing manager Andy Surtees sees as a typical business user's system – display model with added video monitor, printer and one Mbyte floppy drive – it finally costs about £1,500. Initial sales will be direct from Grundy by mail order, but Surtees plans to have a dealer network of about 50 outlets by July.

The machine comes with its own operating system, built up from hardware independent modules as far as possible and a Basic compiler. It will also run CP/M, giving it an opening to application software, and it will be supplied with application packages in ROM.

The first of the ROM packages available in the next few months, will offer statistics and text processing. The battery machine is expected to enhance the potential for these packages.

NewBrain started life with Newbury Laboratories, and was once in line for the BBC computer education series.

SURTEES . . . NewBrain dealer network of 50 by July.

NEWS BRIEF

Life policy quotations on viewdata

LIFE assurance quotations via viewdata TV sets are possible with Frentel, developed by Friends' Provident and Rediffusion Computers. The viewdata TVs, connected through the telephone network, emulate terminals to Friends' Provident's Gladis IBM 3033 computer system, allowing instant quotations to brokers.

A Rediffusion R1800/50 with viewdata software in Dorking has been running the system experimentally since February for local brokers.

Telecom show

A PERMANENT exhibition of UK telecommunications history, with mock-ups of possible future systems, has opened in London. It is being run by British Telecom in an annexe to Baynard House, the centre of the new City Overlay digital network and the home of the first System X exchange. It is open from 10.00 to 4.30 Monday to Thursday each week and admission is free.

Teletex study

TELETEXT transmission using all 625 lines of a TV channel instead of four to eight lines, is to be studied by UK consultancy Logica and General Systems, an Italian informatics company. The project, backed by the EEC data processing support scheme, will look at two-way teletext and higher level teletext giving photographic quality pictures as well as the feasibility of full channel bandwidth systems.

Cork branch

FOUR Phase Systems of California, acquired by Motorola last March, has begun operations in Cork aimed at getting more sales in the European market. A start-up staff of eight is engaged on a number of projects for development in the office automation market, following a period in training in the Cupertino headquarters in California.

Workstation

CTL has added a low-end workstation to its range of Convergent Technology desk-top computers. The AWS family is built around the Intel 8088 16-bit microprocessor with up to 512 Kbytes of RAM and floppy or Winchester mass storage. Prices run from £3,000 to £8,000.

Branching out

WIDENING its options, business software specialist TABS now has its range of accounting packages up and running on the Sirius 16-bit micro and the IBM Personal Computer, as well as the Superbrain, NEC PC 8000, Xerox 820 and Sharp PC 3201.

Robot aid

OVER the last year there have been 97 firm applications for assistance under the government's robot support scheme, Kenneth Baker, Minister for Information Technology, has told Gary Waller, Conservative MP for Brighouse and Spenborough. In addition, the Production Engineering Research Association had undertaken 54 robot consultancy studies, he revealed.

For car dealers

A VEHICLE sales administration system aimed at Ford main dealers has been launched by Syntec Systems of Southampton. Called Autofax, it runs on DEC minicomputers and is designed to handle orders to factory, tax documentation, invoicing, payments to manufacturers, vehicle availability, commission and cash outstanding. It has already been installed at Hendy Lennox, a dealership with branches in the South West.

Back-up for mini sites

by Sarah Hardcastle

AN EMERGENCY back-up service for minicomputer installations afflicted by breakdown or disaster has been launched by Comtact, the Hertfordshire company which sells computer time on other people's systems.

Through its time-broking database of installations, Comtact will put companies in touch with sites with similar configurations able to supply emergency back-up. Contingency plans can then be developed.

Certificates will be given to confirm a company's participation in the scheme. They will include size and type of its configuration and be issued on a six-monthly basis.

The scheme will enable users to obtain reduced insurance premiums. Josephine Wans, general manager, said: "We have obtained assurances from a leading underwriter that they will provide discounts of 25% or more on insurance cover to companies with our certification proving their ability to provide emergency back-up arrangements."

The service, which costs £200 a year to small mini users, rising to £500 for larger installations, has attracted 12 participants since its launch last week.

WANS . . . Discounts on insurance come with minicomputer back-up service.

First viewdata TV poll

by Donald Kennett

VIEWDATA has been used for the first time to run a television audience participation exercise.

Voting and opinion polling of television audiences in their homes was first brought into service with a cable network four years ago in the US on Warner Communications' Qube network in Columbus, Ohio.

Now Granada Television's news magazine Granada Reports has used viewdata for an instant mini-referendum on the Falklands crisis among 65 viewers in the North-west.

The poll is to be a regular feature of the programme, and the number of participants is to be expanded to 500 by the end of the year.

The viewdata system used is an Aregon IVS-3 run by AGB Research at its Hanger Lane Computer Services subsidiary in London. One of its first viewdata clients Thames Television, has transferred one of its market research applications to the viewdata service from conventional terminals dialling in to a dedicated mini.

Thames is using viewdata for information distribution, rather than data collection, the purpose of Thames' experiment.

AGB is contracted to provide Granada with the results of its poll within three minutes of the question being asked on television. It has also taken on a more leisurely exercise for Channel Four which will provide the results the following morning.

Considerable time is still saved compared with telephone interviews, and fuller information is provided than with meters installed in survey participants' television sets.

Channel Four is to start this summer collecting information on viewing habits in preparation for its own launch in November. An initial 100 participants are to be expanded to 1,000 by the end of the year.

Philips is supplying 9 inch monochrome terminals through Ansafone subsidiary Viewdata Business Systems.

Job scheduler for UK

by Maggie McLeming

A NEW job scheduler for large IBM mainframes running under the MVS operating system is to be marketed in the UK by software supplier Westinghouse Management Systems, under an agreement with major US bureau On-Line Business Systems, OBS.

Westinghouse, a specialist in IBM-compatible software, currently has a scheduler for DOS/VSE machines called Jolman. The new product will expand the range of its systems software upwards into the larger mainframe area.

Called Prosper, and not to be confused with ICL's financial planning package of the same name, the new system handles automatic job scheduling, jobstream construction and automatic release for sequencing of jobs within jobstreams, while generating production working documents.

Developed over 12 years by OBS, the second fastest-growing software products and services company in the US, Prosper is used on the OBS time sharing service to schedule between 1,500 and 2,000 jobs a day. It is intended to be the first of a family of products aimed at improving ease of use of IBM systems and training facilities.

Another of OBS' products for which Westinghouse has marketing rights is the Wylbur program development system, which OBS claims takes half the time and resources of IBM's own TSO system.

Japanese close in on IBM

by Boris Sedacca

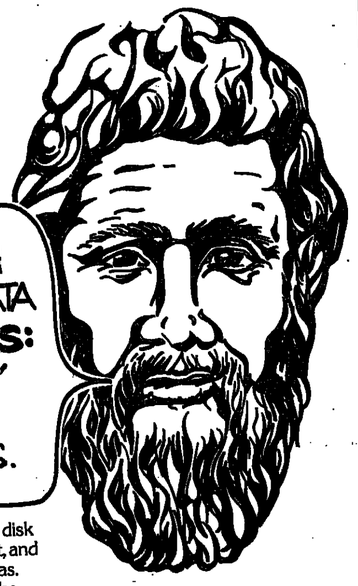
THE Japanese are positioned to overtake IBM in advanced research and development for supercomputers. While IBM appraises the role of Josephson Junction technology in its future product strategy, the Japanese are closing in with their own programmes.

While not claiming faster switching speeds for their Josephson Junction devices, the Japanese have achived smaller surface areas for the circuits.

A Ministry of International Trade and Industry (MITI) laboratory has developed a Josephson junction using a "direct coupling" type of logical gate which it claims is simpler to produce than IBM's "magnetic field control" type, according to the Japanese Economic Journal.

The laboratory contends that with the IBM type it is difficult both to miniaturise and to speed up the action of the gates because of the need for a magnetic-field generating circuit.

Ambitious plans to produce a 1.5 micron line-width gate expected to switch at speeds of under 10 picoseconds (thousand billionths of a second) are now under development.



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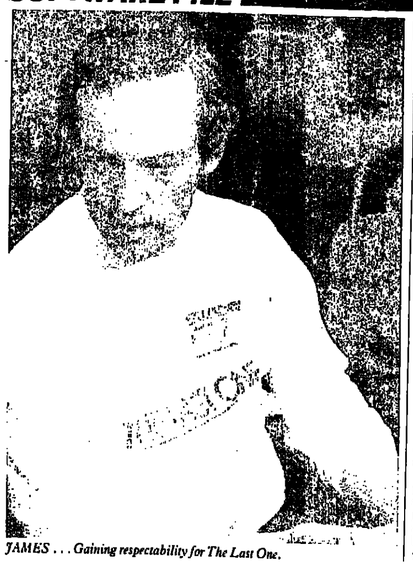


JAMES . . . Gaining respectability for The Last One.

Software houses ready to make a killing on payroll packages

WHILE microcomputers have been busy monopolising the accounting and stock control system market, payroll has been one area in which they have hardly excelled. The quantity and complexity of calculations involved in the most elementary payroll system were sufficient to bring most machines to their knees.

Ensuing recriminations might well have had a similar effect on staff relationships, so the management of small and medium-sized organisations can hardly be blamed for playing a waiting game, until developments in micro hard discs provided the capacity to cope at the right price.

The current proliferation of payroll packages on the market seems to indicate that the axial point between rising technology and falling hardware costs has at last arrived, and the smaller software houses are getting out to make a killing.

One of the lowest priced packages is the Jarman Payroll and Personnel Records System, developed by Tring-based Jarman Systems, which costs £490. Written in Pascal, it caters for up to 300 staff if running on an Apple II, and with unlimited numbers if used on an Apple III with hard disc, according to Jarman Systems.

Also in the lower price bracket is Powerpay, recently introduced by Omicron Management Software, which operates on any 8-bit or 16-bit micro running under the CP/M operating system.

Costing £700, Powerpay will take up to 9,999 employees, and runs at an average speed of 30 employees processed per minute.

For companies with specialist requirements, such as irregular hour-working, or casual labour, there are also low-priced packages. Brentford-based DLA Computers is offering Payroll-Plus, a system particularly aimed at companies in the security business, for £600.

Payroll-Plus is designed for the 16-bit micro running under CP/M or CP/M86, and is currently implemented on the FTS Series 88 and the Dynabyte range, although it is shortly to be transferred to the Sirius I. According to Dave Barella, sales director of DLA, the package is an enhanced version of Compact Accounting's payroll system, which has a multiple-rate module built on to it.

All the companies now involved in writing payroll software fully realise the importance of back-up and maintenance, and the majority guarantee a response within 24 hours. Omicron and DLA rely on local dealers to supply first-line support, while Jarman Systems intends to supply distributors with utility programs so that they can get into the Pascal code.

SOFTWARE BRIEF

Language range grows

A WIDER choice of programming languages is to be offered to users of the Triumph Adler Alphatronic microcomputer. Previously restricted to Microsoft's Basic, the range is now extended to include UCSD Pascal, Ansi 74 Cobol, and Ansi 66 Fortran.

Triumph Adler's Software Division has also released several programming tools, such as the dBase II interactive database management system.

In business

AN integrated business management system aimed at the whole spectrum of manufacturing companies has been introduced by Hogg Robinson Systems, part of the Hogg Robinson Group. The system covers stock control, order processing, materials requirements and financial accounting.

Seminar

A SEMINAR on IBM's database query utility, SQL/DS, is to be held by Pergamon Infotech in London from May 25-27.

Now NCC 'adopts' The Last One

CONTROVERSIAL program generator The Last One has gained a stamp of respectability through being sold by the Microsystems Centre Division of the National Computing Centre.

Launched in a blaze of publicity last year, The Last One was subject to delays in supply which led to doubts about its actual existence. Claims by the author, David James, that it would be the last program a user would ever have to buy were said by the few users who did have a copy to be exaggerated, and the software was not completely bug-free.

Now the NCC has adopted it, and will be running a course in June for non-DP Professionals, to provide them with "hands-on" experience of the package. Towards this end, Colin Harris, senior consultant in the Microsystems Centre, has been testing it for the last three months.

"I wouldn't claim to have tested The Last One to destruction, but obviously we're reasonably happy or we wouldn't be doing this," he said.

According to Harris, the NCC is not claiming that the package is now free of all bugs, because "not enough time has really been expended to establish that. However, you could go on waiting for ever for a package of this type and price if you said that."

He also pointed out that the designer of the system, DJ "AI" Systems, has not been advertising The Last One for some time, and has been busy perfecting the software instead.

The type of applications Harris envisages for The Last One are small updating systems, largely database oriented, such as a convertible currency application.

It is not the only microcomputer package that may be taken under the NCC's wing. "We are only doing two or three trial courses to start with, and are looking to other products as well to do the same sort of thing," confirmed Harris.

Self-teach Cobol on a microcomputer

MOST Cobol programmers in the industry today probably received their initial training without sight of or contact with a computer. After days of ploughing through theory and manuals, the first treasured bundle of coding sheets would have been sent off for punching, then returned having miraculously become a program. About as true to life as Dallas.

A newly-formed software house called Microcal, based in Windsor, is aiming to change all that, and has launched an interactive CIS Cobol training package for running on a microcomputer.

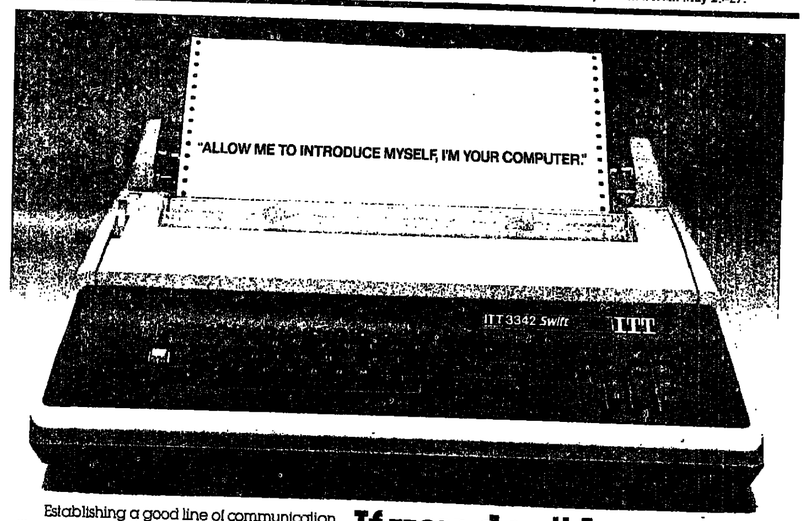
Jon Shearing, one half of the partnership that runs Microcal, used to be a lecturer at ICL's training centre at Beaumont.

"The course is aimed at a person with computing aptitude, and takes them from the very basics, with little knowledge, through the design and writing of their own system," he explained.

To allow potential customers to evaluate the software before committing themselves to paying the full cost, the course has been divided into two parts. The first is called an assessment pack and costs £35. This takes the student through the rudiments of Cobol, to the production of an initial program, and includes an introduction to information processing in a business environment. The price of the completion section is a further £315.

"The course is slanted towards business applications, and uses personnel and stock control systems as examples," said Shearing.

Programmers have often had to learn their skills at some distance from the computer.



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And the ITT 3341 'Swallow' is no slouch either, with a top speed of 60 characters per second.

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Decision Data packs a punch with 80 per cent rise in orders

LAST year Decision Data Corporation, the Pennsylvania peripheral manufacturer, missed getting into the Datamation top 100 by a whisker.

This year, with sales up 15% to just past the $50 million mark, DD could make the magic century.

The company, in which the NEB-owned loss-maker Data Recording Instruments has a 40% stake, increased its order book by 80% from $6.6 million at the end of 1980, to $11.8 million at the end of 1981.

Company president Richard Schineller attributes this huge advance in sales to the IBM compatible workstation launched by the company in 1980.

According to Schineller volume deliveries of the CRT workstation began in late 1981 and he attributes some of the profit slide to the additional sales costs incurred as the company built up its workforce to market the device.

Despite the fall in profit, from $3.03 million in 1980, to $2.05 in 1981, the overall trend for the company is very favourable. Quarterly sales revenues have risen steadily throughout the year from $10.1 million in the first quarter, to $15.3 million in the last period of 1981.

The first quarter of 1982 continued the trend with sales of $16.1 million.

The rise in profit through the quarters has been just as steady, from $327,000 for the first quarter of 1981, to $804,000 for the first quarter of 1982.

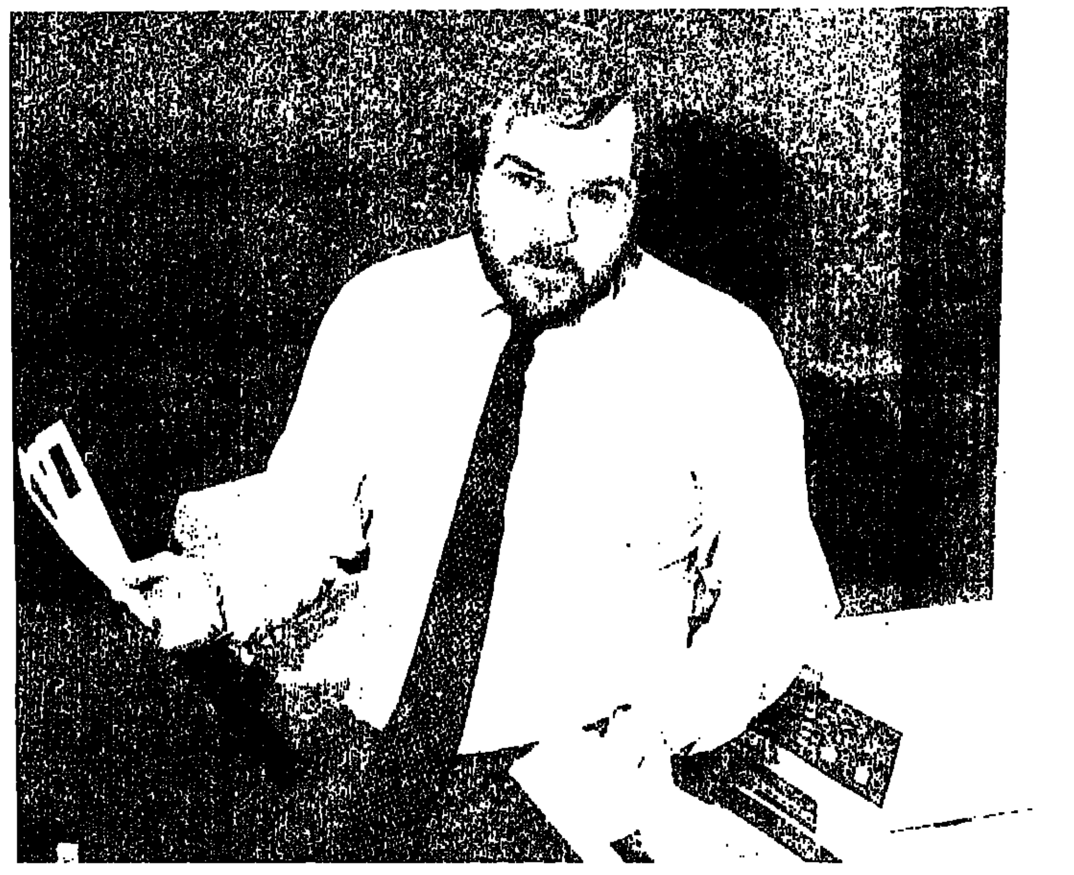
The profit surge in 1980, from $627,000 in 1979 was in any case bolstered by an extraordinary item of $1.5 million from the ending of some of the company's debts following the DRI investment.

Profits for 1981 appear to be solidly generated from operations. The fall in the company's indebtedness was also substantial, from £12 million in 1980, to £7 million in 1981.

Apart from the powerful drive into the IBM compatible market Decision Data also claims to be the only real plug compatible supplier in Europe.

According to Gisela Haywood, director of international marketing for the UK subsidiary, Decision Data will supply terminals, printers and communications devices which can be plugged straight into IBM computers without any form of modification.

She said Memorex was beginning to appear in Europe as a true PCM too, but without the native character sets for terminals and printers which are essential in Europe.


NEAL . . . "Microfilm boom is here".

"Europe is not one market, when you actually get down to the kinds of keyboard used in the various countries," says Haywood, who has signed up distributors for Decision Data in all of Northern Europe except Norway this year.

She picked up many of her contacts from Hanover Fair last year and was surprised at the volume of new sales, over £200,000 worth, which the company made there.

In one revealing insight into being a PCM she said that Decision Data often found itself used as a lever to get IBM to deliver equipment. "Lots of people threaten IBM with a decision in favour of Decision Data, in order to get IBM to speed deliveries".

The presence of a fully plug compatible vendor like Decision Data also curbs the inclination to use pre-emptive announcements well ahead of any possible delivery schedule in order to get customers to defer decisions in favour of the dominant suppliers.

One of the more intriguing products supplied by Decision Data are card punches, to a market growing at roughly 20% per annum.

This may come as a surprise to those who thought the market for 80 column punchcards was in decline by about 20% a year. It is – but within that decline is a vibrant and rapidly growing market for 80-column cards with an aperture which carries a microfilm picture of an engineering drawing.

The reason the market is growing is because the 80-column cards allow mechanical indexing to be carried out, and engineering plans and drawings to be carried in very small areas.

David Neal, UK sales manager for Decision Data says that the microfilm boom is here, and at the centre of it is the aperture punchcard.

He says the whole of British industry is going over to this method of storing copying and indexing engineering drawings.

Neal reckons that there are still two billion 80-column cards being supplied into the UK each year, on a declining basis year by year of 200 million cards.

For aperture indexed punchcards he says that about 120 million cards are being used, with a year-on-year increase of about 30 million cards.

Plessey profits up 30% say brokers

WITH full year results due next week, industry analysts at brokers Savory Milln are forecasting pre-tax profits of £110 million at telecommunications giant Plessey. This would be a 30% rise on the 1980/81 figure of £84.5 million.

The brokers forecast a modest increase in turnover of just 7% to £934 million.

Had the company not disposed of several of its more marginal activities in capacitors, hydraulics and wound products, the analysts suggest that Plessey might have passed £1 billion.

They also forecast a total reverse in the company's debit position. In 1980/81 Plessey paid £11 million interest charges on its debts. This year is likely to see a total reversal, with the company collecting £11 million in interest on its cash balances.

Looking at the year ahead, the brokers expect Plessey's main telephone exchange division, which supplies about 30% of all British Telecom exchanges, to grow a little faster than in 1981/82. Higher expenditure by BT is expected to account for this, but Savory Milln expects no significant contribution from new products in the Office Systems Division.

An analysis of Plessey turnover last year shows that main exchanges and office systems contributed about 42% of the company's turnover, and 46% of the profits.

Within the Office Systems Division 80% of the £128 million turnover was accounted for by small private automatic branch exchanges.

For the Monarch system, which Plessey supplies jointly with GEC to British Telecom, the company still has an order book stretching a year ahead and worth £20 to £30 million.

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300% rise in turnover

WESTON-Super-Mare based DRG Business Machines has achieved a near 300% increase in turnover in the year ended December 1981.

The company, a subsidiary of international packaging and business equipment suppliers Dickinson Robinson, raised turnover from £2.2 million in 1980, to over £6 million last year.

The boost is attributed mainly to a £2 million rise in DRG's peripherals and supplies division, according to managing director Michael Kilmartin.

Last year turnover in this division was £500,000.

DRG specialises in supplying Japanese manufactured peripherals.

Although quality is emphasised by Kilmartin, aggressive pricing in pursuit of the substantial growth DRG has achieved probably accounts for much of the huge rise in sales.

Recession hits Sperry

THE recession and high interest rates are the main causes of the 11% decline in fourth quarter profit at Sperry Corp, parent of Sperry Univac.

Profit for the quarter was $81.8 million, compared with $92.4 million for the fourth quarter of 1980/81.

The decline caused Sperry to end the year with profits 29% down for the full fiscal year, from $311.2 million, to $221.8 million.

The company's new chief executive, Gerald G. Probst, says the company expects fiscal 1983 to be comparable with the year just past.

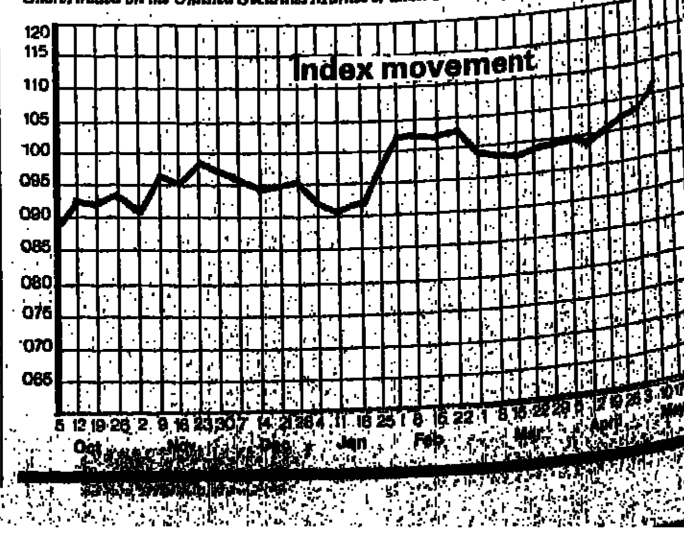
CW SHARES TABLE

Date 14/5/82 — Index 100 88 — Change +1.92

Pence 1982 High	Pence 1982 Low	London Stock Exchange Stock	Pence Price	Pence Chge
193	181	ACT (App Comp) (25p)	193	+1
174	150	HOC Int (25p)	168	+4
75	18	R. Bay Kent (25p)	75	+1
173	101	Chubb (20p)	123	
66	40	Cole Group (25p)	60	
280	233	C.A.S.E. (20p)	280	+15
730	540	De La Rue (25p)	640	+10
303	235	Fetal (25p)	303	+13
725	675	Ferranti (50p)	720	+5
807	787	GEC (25p)	807	+8
58	33	ICL (25p)	60	
47	41	Kalamezoo (10p)	43	
310	273	Kode Int (25p)	310	
306	215	Memec (10p)	306	+20
138	110	Muirhead (25p)	136	+6
278	218	N'market (1981) ($.08)	272	+12
820	670	Norsk Data	820	+20
365	285	Office & Elect (25p)	365	+30
540	445	Philips Lamp (fl10)	515	–20
473	340	Plessey (50p)	423	+5
87	65	Quest Auto (10p)	80	+5
430	353	Racal Elect (25p)	420	+12
260	171	Rediffusion (25p)	220	..
468	415	Thorn-EMI (25p)	448	+20
90	78	UC&T (50p)	77	–
		OTHER MARKETS*		
90	88	Bus Comp (10p)	80	+3
557	415	Comp Serv (£1)	461½	–78½
152	78	Consult (C&P) (10p)	152	+10
262	245	Io Tech (25p)	247	+2
170	122½	NMW (£1)	128	–
55	43	Rolfe & Nolan (10p)	50	–
115	78	ScanData (10p)	115	–
198	180	Star Comp (10p)	180	–
106	88	Trident Comp (10p)	88	–
96	80	Zygal Dyn (5p)	80	–

$ 1982 High	$ 1982 Low	US Stock	$ Price	$ Chge
20½	19¼	Amdahl	22½	–½
20¾	14¼	Apple Inc	16½	–½
28	21¼	Auto Data Pro	25¾	–½
37¼	31	Burroughs	[illegible]	–
13¼	8¾	Comp Auto	13	+½
16	11¼	Comp Sciences	12½	–
15½	12¼	Comshare	[illegible]	–1
35½	29½	Control Data	[illegible]	–½
36¼	24	Cray Research	[illegible]	+1
51¼	28¼	Data General	17	[illegible]
49½	13	Datapoint	24	–½
24½	17¼	Dataproducts	18	–2
107½	72½	Digital Equip	28	–1
20	10¾	Elec Data Sys	[illegible]	–¼
8½	3¼	Gen Automation	[illegible]	[illegible]
38¼	28¼	Harris	[illegible]	–¼
45¼	36¼	Hewlett-Packard	[illegible]	[illegible]
78	63	Honeywell	[illegible]	[illegible]
33¼	20¾	Intel	[illegible]	[illegible]
66	57	IBM	[illegible]	[illegible]
56	44¾	Litton Ind	[illegible]	[illegible]
13¼	10	MDS (Mohawk D)	24	–
24	18	MSA (Mgmnt Sci)	17⅛	+¼
17¼	10	Mngmnt Assist	8	–
8¾	6¼	Modular	[illegible]	–3
08	60¾	Motorola	[illegible]	–1½
24½	16¼	National Semi	[illegible]	–½
40½	40½	NCR	[illegible]	–2½
26¾	19	Perkin-Elmer	[illegible]	–
23¾	17¾	Prime	[illegible]	–1½
37¼	29¾	Raytheon	18	–
26¼	19	Signal	[illegible]	–
34	28½	Sperry Comp	[illegible]	–
34½	24½	Storage Tech	[illegible]	+
29½	23½	Tandem	[illegible]	+
35	28	Tandy	88	–
93	70¾	Texas Inst	21	–
27¼	16¼	Tymshare	[illegible]	–
36¾	27	Wang Lab B	[illegible]	+
9	7½	Wyly	[illegible]	

The table shows the closing prices in London on Friday and in America on Thursday. The Share Index is based on the prices of the UK companies in the table. Highs and Lows have been adjusted where necessary.
**Shares traded on the Unlisted Securities Market or under Rule 163(2)(a).*



by Kevin Cahill

Help from the government's loan guarantee scheme recently enabled a young entrepreneur to set up a microcomputer shop in London's Oxford Street. In the run up to Computer Weekly's "first-time finance" conference next month we look at the path taken by another successful new company. .

A 'perfect little tree' growing in Oxford Street

IF you are going to own a chain of micro shops there is nothing quite like 8,000 square feet of Oxford Street to start with.

The chain, called Bonsai – it means "perfect little tree" in Japanese – and including a franchise operation, is Michael Kraftman's dream. The Oxford Street shop, just beneath the tower of Centre Point, was once part of a company his father owned.

But apart from having the first Bonsai shop on a lease so cheap Kraftman calls it a "rent holiday", that is the only real piece of luck he's had.

The rest has been fairly plain ordinary hard work, beginning with what Kraftman claims is the most exhaustive research ever carried out into the Californian micro market by an Englishman.

He is not a native "computer man". By training he is an engineer, with a Stanford (San Francisco) MBA, which is a general business degree.

He became interested in the micro revolution while at Stanford. "You couldn't avoid knowing about it – everyone was into micros in one way or another," he says. From his point of view, it was the obvious growth industry of the future.

Now the world is full of micro stores, micro shops and micro vendors of one kind or another. But Kraftman has not been deterred.

"When you start out in something like this, you've either got to have a unique product or a unique approach," he says.

"In our case, we have unified our products around the CP/M operating systems. But what we are trying to do is serve the middle ground of users.

"These are people, particularly in small businesses, who are not catered for either by the small micro shop which sells off-the-shelf hardware and software, and leaves the user to get on with making it work himself, or the systems house which writes expensive, one-off solutions on contract."

Bonsai has two hardware ranges, one supplied by NEC, the other again an 8-bit device running CP/M, built for Bonsai by LSI of Woking.

Kraftman said that he hadn't had time to digest the impact of DEC's midweek micro bombshell but impact it would have, he agreed.

To get Bonsai on the road, Kraftman persuaded Barclays to propose him for the government loan guarantee scheme. He was successful, and says the main advantage of the scheme is that he did not have to part with any equity in the company.

This is obviously important to Kraftman, who has both broader ambitions than the single shop at Centre Point, and the experience to realise that he may one day want to float the company.

He discussed the expense of the loan scheme, which, with the 3% premium charged by the government, is now costing him nearly 20% a year in interest charges alone.

This adds up to £15,000 a year, but Kraftman says the real killer is rates.

He admits that without the "rent holiday" he gained by acquiring the premises and the short lease that went with them, things would not be rosy. This lease comes up for renewal soon and, if the lease follows the pattern of others in the area – going up not by hundreds of per cent but thousands – he'll have to think again.

This current method of financing Bonsai, using the government-backed loan as medium-term finance, and an overdraft facility with Barclays as a short-term financing facility is, he feels, the best way to do it.

And if it works? "Well, so far we're just on target for the sales we planned. If it works, there will be Bonsai stores all round the country beginning as early as next year."

Michael Kraftman is 24, and Bonsai is his first big venture on his own account.

KRAFTMAN . . . "If it works there will be Bonsai stores all round the country."

Semiconductor exports boom takes NEC to over $2.5 billion sales

STRONG export performance enabled Japan's leading semiconductor manufacturer to record an 18% rise in sales for the year ended in March.

Nippon Electronic's export sales, now 33% of all the company's deliveries, showed a 21% gain on the previous year.

The company's total sales have now passed the $2.5 billion mark to $2.6bn and profits rose 24% to $45.9 million.

The improved profits are probably a reflection of the phasing down of NEC's huge investments in semiconductor research and manufacturing.

These investments have led to NEC becoming the first company in the world to begin volume delivery of 256K RAMs and have enabled it to programme deliveries of the first 1-megabit ROM for next month.

The 1-megabit device, built around circuits 1.8 microns wide, is expected to come out of production at about 100,000 a month by the autumn.

The company has also captured about 28% of the Japanese home market in personal computers, making it No 1 ahead of Sord's 17.9%.

The machine on which the company has made its micro fortunes is the PC8000. This has not been as successful abroad as in Japan and NEC has taken the unusual step of adapting some of the PC8000 machines to run its smaller rival's special PIPS language.

NEC has also followed Sord's style in setting up bit shops where customers can browse around the company's products and get full support and software back-up on site.

The company recently launched a huge mainframe, the NEC1000 with a claimed mips rating of 29. This makes it twice as powerful as the top end of IBM's range, although the NEC machine is not IBM compatible.

Nippon Electric is fully quoted on the London Stock Exchange and the price has hovered around 180p for some time.

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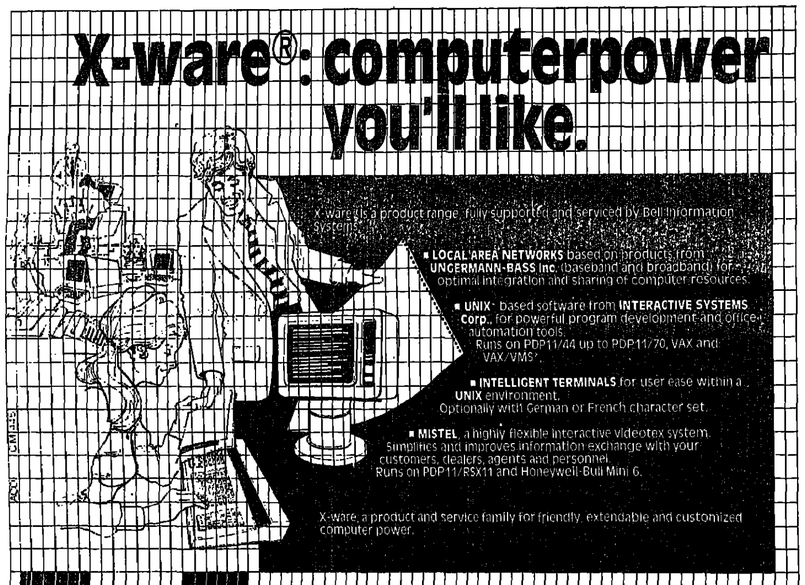

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COMPANY: .....
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Chip costs rise, lead times slow as slump eases

by Robert Parry

THE lifting recession and accompanying increased market activity for semiconductor components may be good news to the chip makers, but for the end user it looks likely to spell longer lead times and higher prices.

While US semiconductor manufacturers are showing relief – tempered by caution in some cases – that an upturn in sales heralds the end of a two-year low for the industry, there are warnings that it will also mark the end of price attrition.

Increasing demand, particularly for newer, more glamorous devices such as 64K dynamic RAMs, will start to push prices up and lengthen the time customers will have to wait for deliveries.

The pick-up in sales in mid-February has carried on through to April, causing leading figures in the US industry to look optimistically to the future.

Advanced Micro Devices' chairman Jerry Sanders reports, "The recession is over for AMD", and he predicts a rise of about 30% in AMD's dollar sales over the current fiscal year.

Signetics and National Semiconductor are showing encouraging order bookings, and Intel has started hiring people again.

Following its 12% increase in sales value over the last quarter, Intel is expanding its workforce by 500 people.

But both Intel and NatSemi retain a sense of caution. Neither is ready to predict imminent recovery for the semiconductor industry, believing the current improvement in sales could still be short term. The sales bulge could be caused by customers replacing stocks which have been allowed to run down, and the industry still has considerable unused manufacturing capacity.

Even so, Intel chairman Gordon Moore last month firmly said he was sure the recession was over, following the significant improvement in world sales over the previous three months.

European sales feature in the *upturn seen by the US manufacturers*, along with sales to smaller companies building personal computers or terminals.

Video and computer games makers are also showing strongly as chip buyers, while sales to the more traditional big buyers – mainframe and minicomputer manufacturers – remain flat.

In the UK, distributors and local operations for the semiconductor manufacturers *share the belief* that things are looking up. "We thought the UK would come out of the recession first," says Motorola microprocessor and microsystem marketing manager Robin Saxby, "and we now believe we're out and smiling again."

This was predicted for later in the year by Motorola's European marketing director Dedy Sahan in his annual market review last autumn, but has happened some months sooner than expected.

Texas Instruments sees a "loosening of the purse strings", with customers beginning to go ahead on projects previously put on ice and sales looking pretty buoyant, while Japanese manufacturer *Hitachi is noticing the distribution* side picking up here in the UK.

Product marketing manager Nigel Simpson sees this as a good indicator of what the OEM side of Hitachi's business is likely to do.

But with the optimism shown by the battered semiconductor manufacturing industry comes the warning that prices and delivery are set to rise.

Welwyn Electronics' marketing director Graham Latham has warned of delivery times stretching to 20 weeks for standard items, and double that for specials, in the next six months, accompanied by a price jump.

Saxby shares this view, seeing *popular new components particularly being in short supply.* This is already noticeable for 64K dRAMs, with Motorola and Hitachi both reckoning on an eight to 12-week lead time now, rather than ex-stock delivery. To some extent this can be *attributed* to customers feeling they cannot afford to be seen not using these high technology products.

As for rising prices, Motorola agrees that customers will have to pay more for their chips – "we in industry have stopped *giving it away*," says Saxby – but Hitachi sees things more under control, and does not *think prices will necessarily leap in the near future.*

NEC application dept

JAPANESE microprocessor manufacturer Nippon Electric has opened an application department at its UK headquarters in Scotland. The department, at NEC Electronics' New Stevenson site, is now operational and responding to customer enquiries, says its manager Bob Laird.

The department aims to offer a three-tier service, giving advice on selecting suitable devices for particular applications, supporting customers if they come across technical problems, and doing full project designs where customers do not have their own design teams.

At first NEC's microprocessor systems and peripheral devices will be the main concern.

Multibus-compatible board products will be supported, and in the longer term the service will extend to cover most of NEC's major products.

Second source

FRENCH chip manufacturer Thomson-Efcis is to sign a second source agreement with AMD. The five-year agreement to manufacture fully compatible devices covers AMD's 2900 and 2900 families and associated high performance memories.

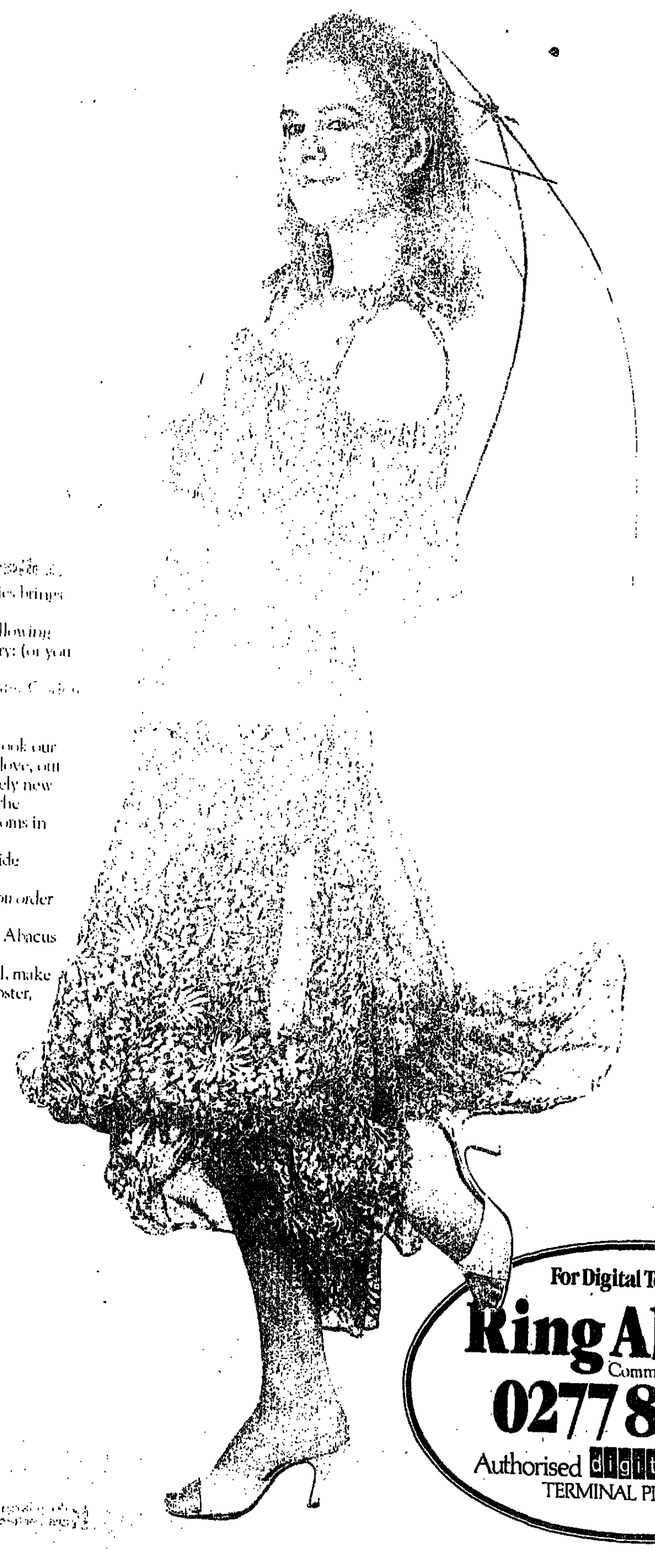
The first devices to be transferred will be the 2901C bit slice and 29516 16-by-16-bit multiplier for digital signal processing applications from AMD and the 9340 video processor and 9341 character generator from Thomson-Efcis.

Low-cost evaluation

A SINGLE board microcomputer for evaluating the Intel 8088 microprocessor and developing simple 8088-based systems at low cost is offered by LPH Associates of Stony Stratford.

Costing £300, the EV88 board carries an 8088 processor connected in minimum mode, 2K of EPROM containing a monitor and 2K of CMOS RAM. Sockets for further memory chips are provided with decoding for 16K of RAM or EPROM, selectable in 2K blocks.

COMPUTER WEEKLY, May 20, 1982



Here is the news and the good news.

Our third advertisement in this series brings you good news.

We now have large stocks of the following Digital[1] products, for immediate delivery: (or you can have a demonstration first).

VT[®]103 (Robin) Personal Computer.

VT125, Graphic Option.

Both ex-stock!

To celebrate all this good news, we took our lovely model, The Lady Henrietta Foxglove, out into the lovely Spring weather for a lovely new photograph. (As you know, Digitalis is the botanical name for Foxglove, which blooms in the Spring.

Unfortunately, the weather let the side down.

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Principles of Infotecture—3

Separate your basic goals

Tom Gilb is an independent consultant, lecturer and author on computing topics.

"FUNCTIONAL" goals are those on which system designers are given no choice. They are absolute "givens" without which the system would not serve the most fundamental needs of the system user.

Typically, functional goals describe the application at hand. For example "Bank foreign exchange system" or "Navy helicopters to ship communication system". Functional goals may describe necessary subsets of these major ideas.

Our design language traditions are strong in this area. It seems that the vast majority of system specifications is related to functional areas. This is understandable historically, since we have been so concerned with identifying exactly which functions were to be automated. The qualities of that automation have been taken too much for granted.

The initial transformation of the functions from a non-computerised environment to a computerised one gave us such dramatic improvements in attributes as cost, speed and reliability, that our only need was to know how to do the most primitive programming of the function.

Now many of us have long since progressed through one or more generations of automated solutions. For such systems the only interesting improvements are in the area of improved attributes.

Let me define the concept of attributes more clearly. Attributes are system qualities and system resources needed.

Qualities are measurable degrees of desirable system properties such as speed of work and response, reliability, availability, maintainability, extendability, ease of use and learning, security, portability and the like.

Resources are those system attributes which we would normally prefer to reduce consumption of during development and operation. These include money, time, people-power, and machine capacity.

My observation is that the difference between system success and failure today is based on attributes; not on which functions are automated.

I believe we must begin to control the attributes of systems from the beginning of the design phase (when the users tell us what they want), throughout the entire design phase — particularly the high level architecture — and through to delivery. And in fact for the life of the system, we must be prepared to control measurably critical system attributes.

Normally we fail to do this. At best, a small minority of us state the required attributes in a clear, unfortunately might be taken as "goals", when they are in reality only presumed solutions to a problem, which is as yet usually unclearly specified. More about techniques in the next column.

> **The difference between system success and failure today is based on attributes; not on which functions are automated**

meaningful language. Few exercise any real control over attributes during the design process.

We do try, in a primitive manner. We "structure" things and we promise ourselves to document better than last time. But most of this is a futile comedy which is not able to meet the real needs of the system.

One of the fundamental problems here is that we do not make a clear separation of functional goals from the attribute goals at the beginning of the project: before any serious design is made.

I find, in almost any goal document I come across (yes, yours too!) that not only are both goal types (function and attribute) intermixed in the same paragraphs. But they are even intermixed with design techniques, which then

The reason for insisting on separation of attributes from functions is that functions are merely binary demands. We must meet them. The only question for the designer is when they shall be met in an evolutionary process, and how they can be sub-divided into functions which can be separately implemented for various reasons.

Attributes, on the other hand, are "measurable ideas on a scale". We may have absolute demands as to the "worst case" levels for each attribute. But the interesting design battle is fought in resolving the inevitable conflict between attribute quality goals which are struggling for resources in direct conflict with one another.

If this conflict among portability, maintainability, response speed and usability is to become clear to the designer, then I consider it necessary that these attribute goals are treated separately from functional goals and most certainly from presumed solutions ("techniques").

Try the following exercise on the design specifications you are currently working on: Mark all functional goals in pen with "F" all attributes with "A" and all techniques or solutions with "T". Maybe you will decide to list them separately for clarity in the future.

Tom Gilb

HUMAN TOUCH

Keeping track of time

Cliff Dilloway is an independent consultant specialising in accounting software, taxation and payroll.

IT is the rotation of the Earth, its passage round the Sun and man's need for orderly behaviour that has brought us to assign names to periods like day, week, month and year. Keeping track of the passing of time has required that these periods should be enumerated and we are all familiar with a naming and numbering convention.

It is interesting to speculate on why the days of the week and months have names, while the days of a month and the years have numbers. Perhaps the philosophers could relate these conventions to the alternatives of naming or numbering houses in a road, as exists in Britain.

Not that the conventions on writing down dates are particularly universal. In the US the month precedes the day while in Britain custom dictates the other way round.

The Canadians have a particularly difficult time with no accepted custom and I have heard of companies where different departments follow different conventions. The Chinese name their years and different religions adopt different days of the week as their Sabbath and count their years from a different origin.

It is as if we did not all share the same rotating planet on its path round the same Sun.

Human beings can adjust to all these differences. Tell them where they are today on a different calendar, and day follows day until the next adjustment is required. For a computer program to have the same flexibility it would need to be able to accommodate all the various calendars and every time a date was entered to be told the calendar format being used.

The suppliers of program packages have to build in that much flexibility, probably with a parameter to specify the date entry format, and then all subsequent dates entered are assumed to be in that format as a default option.

The parameters entered to a program package can be changed so the package designers need to adopt a strategy that will withstand such alterations. A user who needs to change the method of representing dates does not expect all his calendar calculations to go awry.

The strategy I suggest is to store dates internally in the system and on the files in format CCYYMMDD according to the designer's home conventions. The CC stands for century. Any date input or to be output can be converted to or from that format by transformation and an offset. Arithmetic on dates is more readily understood if the usual greater to lesser magnitude positional representation from right to left is followed.

Cliff Dilloway

10 YEARS AGO

From Computer Weekly of May 18, 1972 . . . . . .

A BIGGER share of output for export and a continuing low level of home demand for computers were the dominant features of the latest figures on the UK computer market from the Department of Trade and Industry . . . . .

With the avowed intention of injecting new blood into management, ICL appointed Geoffrey Cross, a top Univac man, as managing director at a salary of £25,000 a year. . . Honeywell launched its System 700.

FOCUS

Revolution at the Palace

THE debate on whether computers offer a threat to jobs looks set for an extended run. A recent news item claims that because of the introduction of microchip technology in Buckingham Palace, it was possible to reduce the number of servants. It is not yet confirmed that robots will be replacing the Household Cavalry.

Such news will be far from pleasing to our energetic Minister for Technology, who has been spreading the theme that IT means jobs.

Speaking at the annual convention of the Institute of Directors, Kenneth Baker said the importance of information as an employment base could not be underestimated. According to his figures, UK information workers represent 40% or ten million of the total workforce.

Before the computer recruitment agencies start wondering where they missed out, a closer study of the official figures reveals that information workers embrace such groups as postmen, administrators, teachers and printers — a collective massing of workers not always associated with information processing.

Hopefully, the same government manpower computer programme will produce some more meaningful computing related statistics, particularly relating to women in DP. The Equal Opportunities Commission has issued a report that largely condemns computers for eliminating over one-third of all existing jobs for women.

Without wishing to challenge such an authoritative source, some facts and figures to support the claim would be welcome.

Certainly there would appear to be room for any redundant female worker in the computer industry. An NCC national survey has found that the average computer installation had 6% fewer system analysts than required, 8% fewer programmers and 11% fewer analysts/programmers. Meanwhile, the NCC reports that the shortage is getting worse, with demand expected to increase over the next five years by more than 20%.

It is far from proved that the introduction of computers results in a smaller workforce within the company. In many well-documented cases, the arrival of a computer signals extra workloads all round. Dealing with the increased stacks of management information, covering such matters as sales forecasts, marketing opportunities and pricing structures and stock levels, will involve much clerical assistance — if only to file away the respective reports.

In any case, few companies buy a computer with the declared intention of reducing personnel levels.

Far from being given the elbow, personnel are more likely to be dispersed around the computer and management services sections. It is all too typical of office management to complain that computer management have been spending more time and company resources building empires rather than databases.

User departments have also been known to comment on the proportion of the company budget being allocated to the DP section.

Having survived the job threat from standard sized computers, fears are now being expressed in connection with the micro revolution. Apples, Pets and soon the IBM Personal Computer are expected to dislodge not only the traditional clutter on the desk of the company executive, but many of his staff. Once again such fears are groundless. Many companies are now making use of micros are small, with probably only minimal staff levels.

Alan Simpson

DOWNTIME

And now for something completely useless

THE human race has always been susceptible to pseudo-scientific mumbo-jumbo, especially when related to some mysterious device for improving the quality of life.

The Victorians had a voracious appetite for any mechanism, however rudimentary, which included the word "magnetic" in its title — such as "The Acme Magnetic Water Closet (patent applied for)".

More recently, rheumatism sufferers flocked to buy copper bracelets, which purported to cure the ailment, but which more often simply caused the victim's wrist to assume a green tinge.

Those little chains often seen dangling from the backs of cars (avoid harmful static electricity — cure travel sickness), and the amazing stick-on plastic film claimed to convert black and white television to colour, also fall into a doubtful area of marketing.

Until now, computers have mercifully been free of such gadgets. Whether this is due to the crooks' inability to invent a gadget worse than the computer itself, or to the disproportionately high percentage of moderately intelligent people within the industry capable of spotting a useless device, we may never know.

But now comes a device showing all the signs of being a UBED (Useless But Expensive Device), aimed squarely at the computer industry. It is a box emitting mysterious particles which can perform tasks ranging from curing the common cold to creating a manifesto for the SDP.

The device in question is an ioniser, designed to replace the negative ions lost in air-conditioned environments, and as vital to the health of human beings as cornflakes and Coronation Street.

"Night shift headaches: down 78%. Nausea: down 100%. Dizziness: down 100%" — a direct quote from one company's Press release.

Believe it if you like, but the only sure way I know of to minimise night shift headache, nausea and dizziness, is to keep the operators out of the pub.

"I know we haven't got a computer, that's the error."

Couldn't we just stick to games in future?

The games they play

SOMEONE once said "War is good for business." Or if they didn't, they should have. While Britain is not technically at war (at the time of writing, anyway) with Argentina, for Chad at least, people getting killed is a pretty close approximation.

I would be grateful for any suggestions on what should be done with the bright young thing at Atari who caught up with the idea of promoting its computer games by supplying them to the nuclear submarines currently on patrol around the Falklands.

"The submariners while away the hours playing war games and space invaders," runs the Press release, which contains the unfortunate line "The Atari computers went into action immediately."

Only playing games, no doubt. But surely the time-honoured promotional method of plying journalists with drink is in better taste than jumping on this particular bandwagon.

Relying on old friends

THERE have been reports that the great white hope of British Rail, the Advanced Passenger Train, APT, is to follow its steamy ancestors into oblivion. The APT has not proved the most reliable means of transport ever to run on rails, and looks likely to be replaced by an electric version of the much older High Speed Train, HST.

The abandonment of new technology, and the return to older, proven machines, begs the question: Do we really need Josephson junctions *at all*? Chad for one would like to see a return to the days when computer persons were real persons, and persons were glad of it.

Last word

COMPETITORS in the London Marathon were bar coded to aid identification. As the plucky athletes logged over the line, an official armed with a portable bar code reader read the relevant details from competitors' backs, and fed the data into the computer.

One entrant, on the verge of exhaustion, staggered into a supermarket, collapsed over the checkout, was automatically laser scanned, and presented with a bill and 500 Green Shield Stamps.

You don't believe me? Very wise.

Chad

ComputerWeekly

Quadrant House, The Quadrant, Sutton, Surrey SM2 5AS

Thursday, May 20, 1982

UK hi-tech needs room for growth

HIGH technology in the UK could find its growth stymied by a lack of suitable factory space.

In the five years to 1980, the production index for the computer industry rose by two and a half times, while the same index across all industries in the UK fell by five per cent.

But the growth of the computer industry has not been matched by the development of suitable building. Since 1967, the amount of floor space available in England for warehousing has increased by 99%, for offices by 64%, and for industrial use by only 12%. Even this small growth rate is of little help to high technology companies, whose property requirements are substantially different from those of the declining industries such as engineering and steel.

These are the conclusions of a property survey published today by chartered surveyors Herring Son & Daw.

The companies on which Britain's future prosperity depends are, almost to a man, involved in some form of information technology, so why are they having problems when they want to expand?

One problem is that landowners have the option of selling their acreage in either an undeveloped or developed state. While considerably more money is to be made from the sale of ready-to-occupy premises, there is the attendant risk of building unwanted industrial accommodation. The recession has meant that the building of factories has developed a rather risky reputation.

For this reason, developers have traditionally fallen back on the tried and tested, but unimaginative, warehouse. Computer companies can use such premises — at a cost. The money involved in converting unsuitable warehouses can run into millions of pounds, which ties up funds which could be more profitably employed.

□ □ □ □

Even if funds are available for conversion, another stumbling block can appear — government regulations on building use classes.

Properties that offer a mixture of office and manufacturing space are, by law, forced to locate on land designated for industrial use. Amidst genuinely dirty factories, situated well away from the sophisticated workforce computer companies require, even the best equipped building will not attract the calibre of staff required.

But the restraint being applied to British companies is not the only area in which the country's economic future is being threatened. Foreign companies have made clear that they view the UK as a base from which to attack the much more lucrative EEC market.

For both American and Japanese companies, the UK is a useful platform within the EEC tariff-free area on which to build manufacturing plant.

Britain's economic and political stability provides by far the most attractive prospect for a European base. But make no mistake: if conservatism puts barriers in their way, they will not hesitate to invest in Germany, France or Eire instead.

□ □ □ □

The buildings required by the computer industry are typically a combination of flexible office accommodation and very light, clean manufacturing space. This is the category for which no "use class" currently exists. Practically the only property available of this type is in purpose-built science parks, which offer excellent amenities and access to motorways, airports and railways.

But the number of science parks is insufficient to cater for the needs of the whole industry. What is needed is an awareness on the part of property developers and financiers of exactly what is required by growing computer companies. But without a change of attitude by planning authorities, the building entrepreneurs' hands are effectively tied.

Information Technology Year was designed to promote high technology and to give its manufacturers a shot in the arm. But it appears that, in the property area, the government is administering something more akin to a shot in the head.

1984 and all that . . .

THIS week's example of the strange things people say about computers was sent in by I. R. McCoubrey, who wins £5:

A new computer costing £35,000 has to be bought by Surrey County Council to handle increased red tape.

Surrey Advertiser

LETTERS

The age of the bureau?

I NOTE that in Systems Thoughts (CW, April 29) Norman Revell uses the decreasing cost of hardware to predict the demise of the bureau industry as we know it today.

However, while the hardware cost is decreasing, there is an argument that the ongoing cost of ownership is increasing. The hardware cost decrease is changing the relationship behind the purchase of a computer system from one of hardware orientation to that of software orientation.

Until recently most users spent a great deal of time in the data processing department evaluating hardware specifications, the architecture of processors, disc access time, maximum capacity of memories and discs, finishing with the tried and tested benchmarks, to point out the general direction which should be taken to select the right machine for the job.

The machine once selected, the next step is to choose the software which, lo and behold, is not available on the selected machine.

However, in the past it has not been too expensive to adapt the software to run on the machine selected and to build in the necessary modifications to suit the business operation.

The scenario presented in Systems Thoughts is correct as regards the changing relative costs of labour and machine, but does not go far enough in showing how critical the selection of software is now. Software now dictates the success of most computer projects.

Both mini and microprocessor-based systems are singularly lacking in good user-friendly system software and application software.

But computer bureaux, on the other hand, have relied for their very existence on the quality of the software offered and are now in a position where they hold the key to the future of our industry.

Nobody pretends that the bureau industry does not have to change and to take advantage of the cheaper hardware available. Certainly most companies in the bureau industry have evolved a strategy for users which can offer the software products on a range of hardware from micros to minis and through to the flexibility of a time sharing service.

It is difficult to imagine how the hardware vendors with their beleaguered profit figures will ever raise the funding to match the user-friendly software available from most bureaux. Indeed, most hardware vendors are anxiously developing third party software schemes to mount better systems and application software onto their hardware.

I would suggest therefore, that the day of the bureau industry is just beginning as they re-package their offerings, while the days of the high growth and profit figures associated with the mini and microprocessor base vendors may well be numbered.

ROGER SMITH
UK general manager
CSS International
London SW1.

User's suite experience

I FOUND Cliff Dilloway's scenario (Lost in a Maze of Screens, CW May 6) a very telling reflection of our own experience with a menu-driven system on our Data General machine.

Towards the end of March we installed a suite of programs around our existing application. In this suite the first screen display accepts user identification and, if necessary, password, and the second poses the question "What do you want to do?"

The reply is a mnemonic which accesses the appropriate application programm directly. Should the user be a neophyte, entry of HELP allows him to consult lists of valid mnemonics.

Experienced users and neophytes alike took to the new system very quickly indeed, at the only additional expense of providing a printed list of appropriate mnemonics at each terminal.

We have found the suite of programs both robust and reliable, and should be pleased to provide further details to interested parties.

MICHAEL BIDDLECOMBE
Operations supervisor
SGS Inspection Services,
Winkfield, Berks.

General Systems User Group

THE General Systems User Group is a group of companies in the North of England who use or have an interest in IBM information system machines (used to be known as General Systems machines), eg Series 1 System 23, 3, 32, 34, 38, the 5280, 5120, and so on.

We meet several times a year at a venue with easy access from the M62, and usually have presentations on topics with relevance to the membership. We feel that there are many more companies in the area which could benefit from membership of this group, and we would be grateful if you could publish details of this letter. Anyone wishing to join the group should contact the secretary at the address shown.

The next meeting is on June 3, when we will have a representative from IBM giving a talk about viewdata on IBM machines.

M. S. CLARKSON
Secretary
General Systems
User Group
S. R. Gent & Co Ltd
Dodwirth Road
Barnsley S70 6JE.

Liveware File by Don

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C.I.C.R.A. is a Registered Charity established by parents of children suffering from Crohn's Disease in order to mount a research programme aimed to find a cure. We run the Charity with no administration costs whatsoever and all money raised is used to further medical research. The size of our research programme is limited only by the money which we desperately need to finance it.
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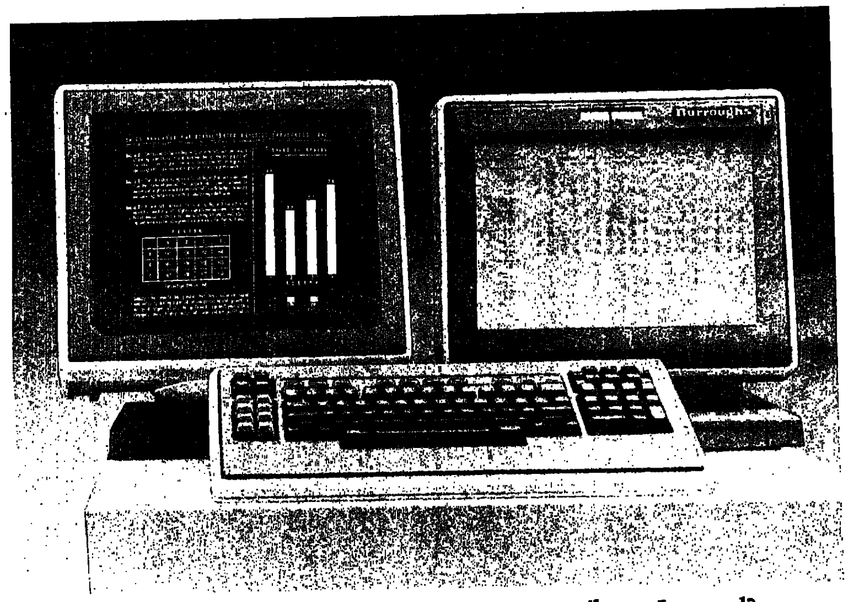
To celebrate the launch of the B20 we're giving away a word processor, free.



The launch of the Burroughs B20 marks the birth of a new generation of multi-functional business micros.

Combining the word-processor and data processor into one desk package, the B20 forms the basis of a distributed intelligence system that'll stand head and shoulders above anything else in its field. So when you buy a B20 business micro you also get a word processor – and a lot more – as part of the package.

How powerful is it?

The B20 is the latest of the new 16-bit micros, with an outstanding and flexible operating system.

Each desktop unit consists of a 16-bit CPU, up to 640 K Bytes of RAM, keyboard, video display and optional mass storage. And on top of that you've got four powerful high-level languages – BASIC, PASCAL, COBOL and FORTRAN.

How easily can I expand?

The B20's optional mass storage devices range from the inexpensive mini-floppy units all the way up to high-performance Winchester drives that'll take you up to 60 M Bytes of storage.

When it comes to linking with other systems you've got no worries either. As well as a Parallel Centronics, it has one RS 422 and two RS 232 interfaces.

And to cover pretty well every other possibility, you've got 3270, 2780, 3780 and ATE compatibility on top of that, with access to other networks through X25.

Now you come to the most exciting feature of the B20.

You can cluster multiple work-stations to form a high-speed local area network.

Which is where 'distributed intelligence' comes in.

Why 'Distributed Intelligence'?

Traditionally, in a shared-logic system all of your terminals relied on one central processor to provide most of the processing, program handling and storage.

When these systems were set up it was because terminals were relatively cheap compared to the cost of actual computing power.

But obviously, the more terminals you hook onto the system, the slower the processing speed, and the greater the strain on your resources.

The arrival of the low-cost 16-bit processors has changed all that.

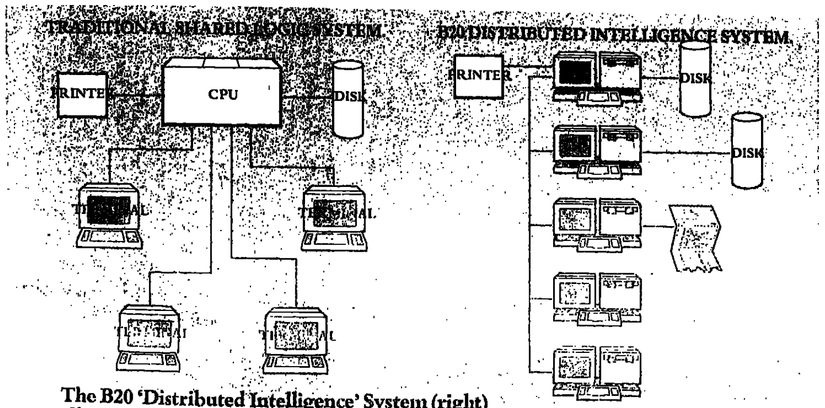
Now it's just as economic for each workstation to have its own processor.

You can still share resources such as printers and mass storage, but now each work-station can process independently of the rest of the network.

Which means you end up with a network that is many times faster than using the traditional approach and at a lower cost.

What about Word Processing?

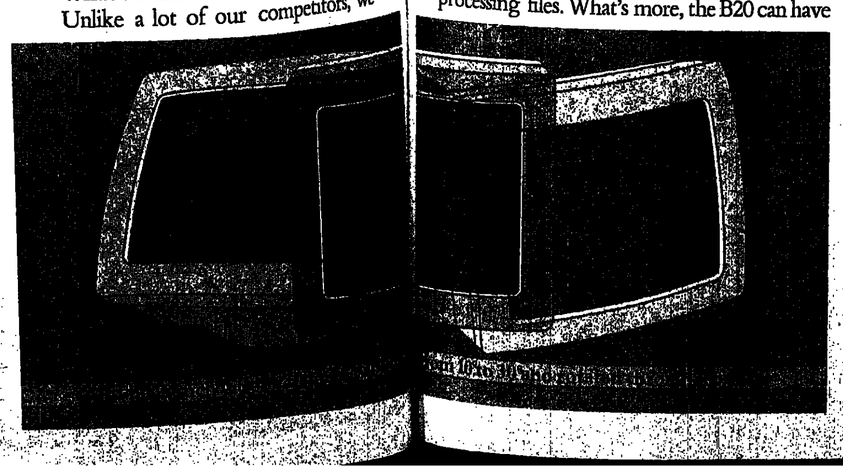
Unlike a lot of our competitors, we haven't simply tagged on a word processing package so we can charge you more.



The B20 'Distributed Intelligence' System (right) allows each work station to process independently giving more power at less cost.

The B20 has been designed as a word processor, with, for example, a full WP Keyboard. In fact, it would put a lot of others to shame.

As for the word processing software, the Burroughs WRITEone package designed for the B20 is a very flexible, easy-to-use, system which will also interface with your data processing files. What's more, the B20 can have a full 132 character screen, (which is as wide as any print-out you'll come across).



Then there's a 256 character font, and because these are stored in RAM instead of fixed in ROM, you have the ability to generate special characters and multiple fonts, to suit your needs exactly.

What about Financial Modelling?

With your B20 you can use one of the most advanced financial modelling and planning packages on the market – Multiplan.®

It'll allow you to answer all those "what if" and forecasting questions, using the built-in flexibility and power of the B20.

Will my end users feel at home with it?

The B20 has been designed with people in mind.

The 15 inch video gives a clear image so you won't strain your eyes, and tilts and swivels so you won't strain your back, either.

The full-size movable keyboard is as easy to use as a calculator and has the usual functions as well as a few unusual ones, such as "Help," "Next Page" and "Finish." And there's a set of programmable function keys as well.

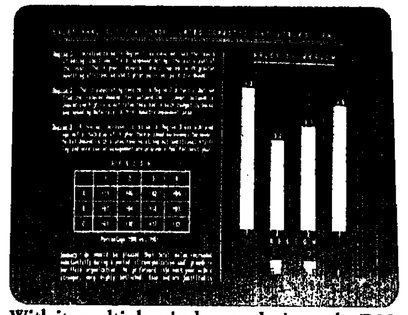
How much does it cost?

A lot less than you think. For example, by clustering multiple B20s, each work-station can cost less than £4,000.

There are plenty of people who'd try to charge you that sort of money for a word processor alone.

Starting at under £4,000 the B20 gives you everything you'll ever need from a business machine.

And when the time comes it can grow into whatever you want it to be.



With its multiple window technique the B20 can show up to 8 different sections at the same time.

Why Burroughs?

We've been helping companies of all sizes to manage information for more than 95 years.

We've probably more experience than anyone else in networking.

And when you buy a B20 you have access to the full nationwide support service offered by Burroughs.

So if you're looking for a desk-top business micro, but you want a word processor and distributed intelligence as well, fill in the coupon.

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Please send me further information on the B20.
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Company:

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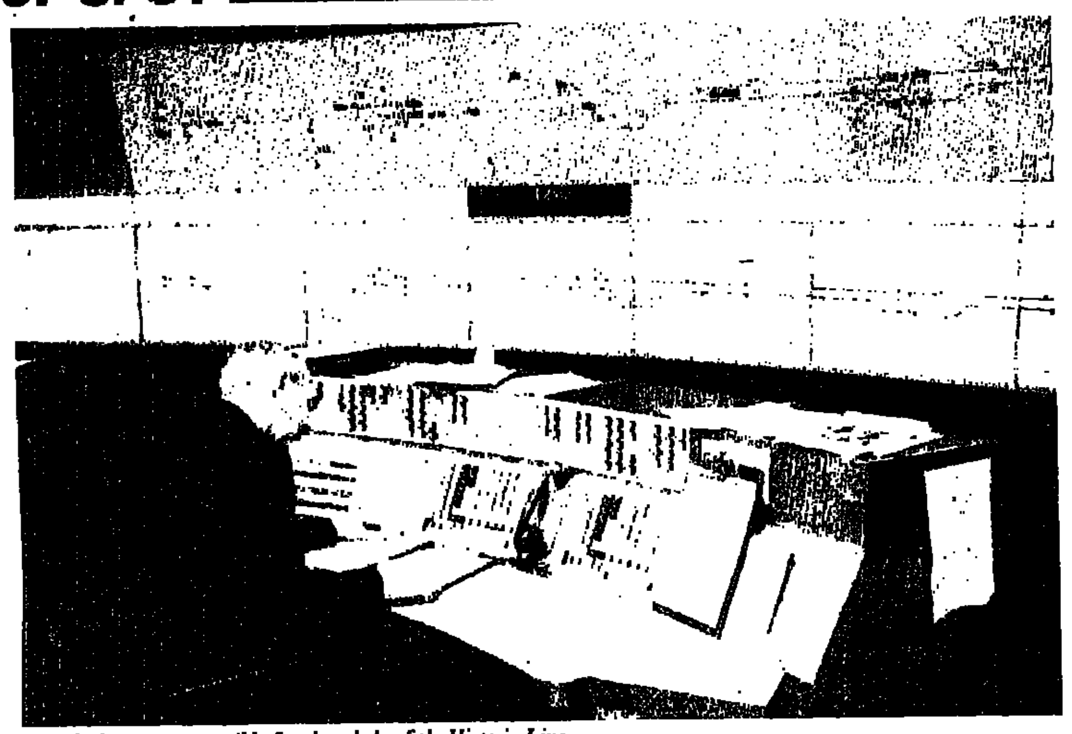
Burroughs

OP SPOT **by Andrew Thomas**



This is the man responsible for the whole of the Victoria Line.

Trains will be automatically spaced out to avoid delays caused by crowds.

Next train at this platform is being watched by a computer

LAST week in Op Spot we were whizzing about at 125 mph courtesy of British Rail. Today we're unlikely to get much above 40. Deep beneath the teeming streets of the capital lies one of the most extensive urban transit systems in the world – the London Underground.

When the system was first built, trains were controlled from signal boxes situated in nearly all the stations, traffic being passed from section to section. In the early 1950s, remote control boxes were introduced. A number of previously-manned signal-boxes were equipped to be operable remotely from another location.

Thus the number of manned boxes was reduced, control passing to a series of "super" signal-boxes, run by one or two operators. The end of the decade saw the introduction of the first program machines, as a step towards automatic operation.

Information on train movements from the timetable (yes there is a timetable, the trains don't run at random) was punched on to a wide paper tape. When loaded into the program machine, the routes and signals could be set automatically if the train identity, set up by the driver before starting the run, matched that on the paper tape.

The system reads the train identity via the running rails, and should the train on the track not be the one anticipated, the program machine will set the points and signals in accordance with the timetable, and flag a warning to the signalman. This allows him to take corrective action and override the machine if necessary.

In the picture of the Victoria Line control panel, you will notice two schematic diagrams of the track layout. The upper one shows the state of the railway from the point of view of the program machines, and the lower the actual situation. In the event of a mismatch, the signalman (or regulator, as he is now known) can see at a glance where the trains are and decide on the measures that are to be taken.

Once a whole line has been automated by the use of program machines, it makes sense to do away with separate signal-boxes, and to concentrate control in one central location. The District and Piccadilly Lines share such an installation, as do the Victoria and Northern.

The latter centre is rather more sophisticated than the former. Yes, you've guessed – it uses computers. Three GEC 4080s and two 4065s reside in the control centre near Euston station. For security reasons its exact location cannot be revealed.

The machines are installed in a Faraday cage to avoid any risk of electromagnetic interference.

"I don't know if it's needed," says Jim Irwin, the man in charge, "But it was cheaper to install it before the machines came online than to find we needed it later. Besides, we won't ever have to redecorate the machine room."

I had to admit that the gleaming steel walls were particularly attractive.

Irwin explained that the computers had been introduced when it was discovered that the two regulators supervising the Victoria Line began to run into problems during the morning and evening peak hours. While the system was perfectly workable under normal conditions, if a number of cancellations occurred during the rush hours, the amount of manual intervention and decision-making involved could put undue pressure on the regulators.

The main function of the computers is the monitoring of traffic on the Victoria and Northern Lines, with the aim of providing the operators with information and advice. For example, the system can provide data on individual trains – such as where they were at any time during the day to the nearest 30 seconds – and supply the identities of all the Southbound trains due to arrive at Oxford Circus in the next 15 minutes.

The "which trains arriving when" data will be used to drive indicators on the station platforms telling passengers where the next train is bound and how long they will have to wait for it. The time-to-arrival on the indicators will count down as the train approaches.

The system is currently only in its first phase – monitoring and logging, providing information never previously available. Because the computers know where all the trains are on the system, in the event of a total power failure, the machines can produce the last-known location of everything on the rails rather than 'phoning each station in turn and asking the staff to look down the tunnel to see if a train is there.

Incidentally, try to avoid being on a train during a power cut – if your train stops in a tunnel, the typical time elapsed before the line controller takes the decision to walk the passengers down the line to the nearest station is an hour.

Other uses of the system in the first phase include the provision of VDUs in each station manager's office, showing any significant gaps in the service.

The second phase of the project will involve the replacement of individual program machines with overall control of larger sections of the railway from the control centre. A pilot scheme is under way at the northern end of the Piccadilly Line.

The third stage, regulation, will provide the biggest benefit, says Irwin. Trains will automatically run at even intervals, to pick up the most passengers possible and to avoid bunching – the commonest cause of delay to the customers. The computers will detect gaps as they form, and slow down the trains in front to avoid the situation worsening.

The longer the gap between trains, the more people arrive to board, causing further delay as they try to pack themselves into an already crowded train. Irwin claims that although some trains will be deliberately held up by the system, the average passenger will receive a better service.

Although the Victoria Line can run unmanned trains, someone is still needed in the cab to cope with any emergencies, such as power failures. Passengers would have to be restrained from disembarking at will and possibly putting themselves at risk, for example, and power could not be restored until all passengers had been accounted for.

Other facilities available to operators include closed-circuit television allowing them to monitor each station. Microphones and loudspeakers permit two-way communication with station staff. These facilities can often identify potential suicides before they throw themselves under trains. Such incidents cause unpleasant injuries to the people involved and cause severe delays throughout the system.

Communication costs are minimised by the simple expedient of installing a private network with the cables running down the tunnels – no British Telecom charges for this installation.

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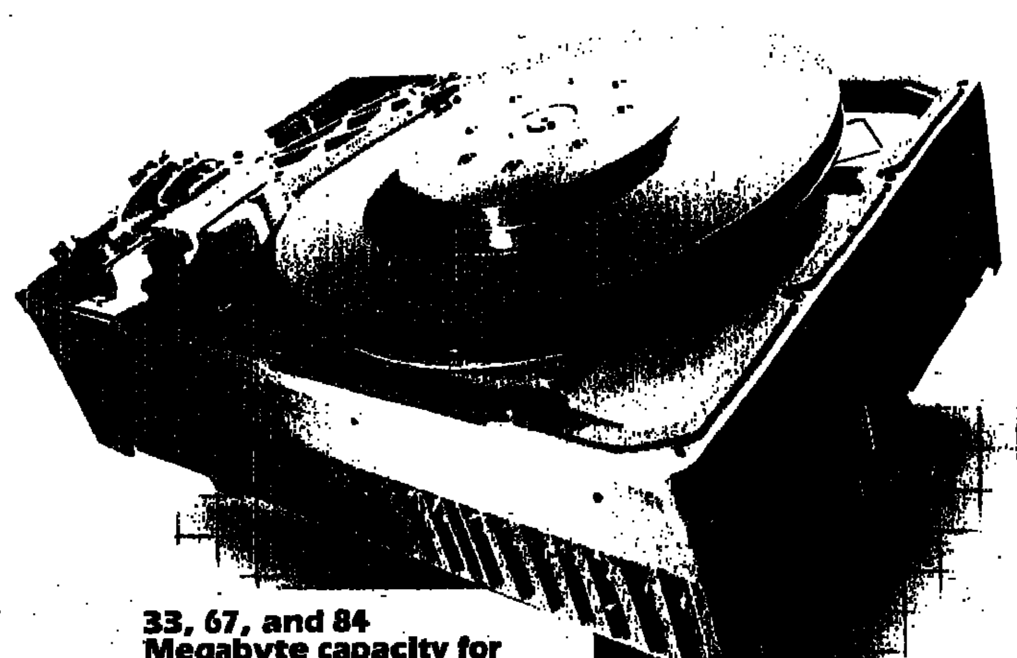

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Wrath of dungeon master

ADVENTURE

FURTHER to the long-running correspondence concerning hints on the game of Adventure, you may be interested in the following letter:

Sir, There is a crack of thunder, a burst of light, and the dungeon master himself materialises beside you. He gazes down at you and intones: "I am the master of the dungeon, whose task it is to ensure that none but the most scholarly and masterful adventurers are admitted into the secret realms of the dungeon, and that they meet the stringent requirements laid down by the great implementers themselves.

"You have displeased us greatly. You have gone against the spirit of Adventure and of the Great Underground Empire of Zork. These lands of exploration and discovery were built at great expense (and at some personal risk) by the great implementers (whom be praised) to give pleasure and excitement to many brave adventurers throughout the many planes of the multiverse.

"Each piece of information, each new treasure, each new room has been a source of joy and wonderment to the explorer. I myself started as a humble adventurer, but through many hours of study and exploration, I won through to the final treasure in the world of Adventure. With many more hours of study, I have achieved the rank of dungeon master.

"From my privileged position in the world of Zork, I can see the enormous pleasure each new discovery brings to every dedicated adventurer. Now you attempt to destroy all the implementers' work by [illegible] to the whole world the solutions to their cunningly-wrought puzzles. Forget not that the most pleasure comes, not from finding the treasure, but from solving the puzzles that protect them.

"However, there are times of extreme frustration when a clue or hint of the answer may be given. To reveal more would cause the full weight of the wrath of the dungeon master (in all his many guises), and all truly dedicated adventurers to fall upon you."

The dungeon master, with a disappointed expression on his face, raises his staff and traces a complicated pattern in the air. He taps you lightly on the head and mumbles a few well-chosen spells. As he completes them, you crumble into dust. With that, he disappears.

PETE FRY
Bristol

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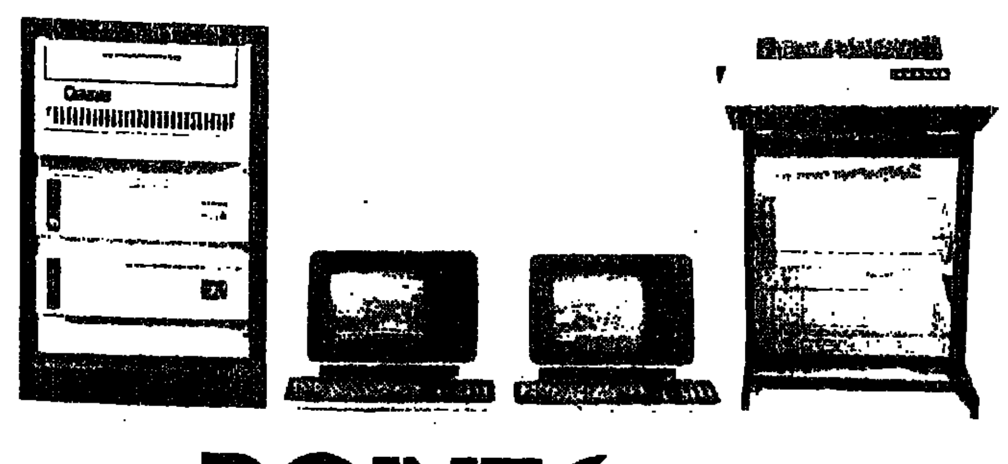

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Microprogramming techniques and a programmable control store permits the emulation of various instruction sets, and a high speed inter-bus operates at 4 megabytes per second. Flexibility of configuration allows a wide range of peripheral devices not limited to a single range. A virtual control panel and built-in diagnostics makes the POINT 4 probably the easiest computer on the market to operate and maintain. Yet, the computer, memory and all options are implemented on a single printed circuit board.

The POINT 4 is also available with a wide range of software products. The multi-tasking, time sharing systems, IRIS and BLIS, support simultaneous system use for data entry and retrieval, as well as programme preparation debugging and execution. The system is designed for maximum flexibility in configuring system peripherals and supports ASSEMBLER, COBOL and BASIC Languages, a variety of utilities and an automatic programming system.

Ultimately, the POINT 4 is a minicomputer of consequence no buyer can afford to overlook.

Find out more. Contact the sole UK distributors-

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COMPUTER SERVICES

PROGRAMMERS PAGE — by Philip Hunter

'If a defence system is too long in development, the cost is met in blood'

WRITING software for defence brings its own peculiar problems. And Leasco Software, of Maidenhead, suffered from them recently when developing a strategic information system called Britmiss for the Royal Navy.

The brief from the Navy was for a system capable of accepting English language messages from existing teleprinter circuits and to provide a database on position and movements of ships and aircraft. This information would be transmitted over secure satellite communications circuits to a compatible terminal on ships and at maritime headquarters.

One difficulty is that a defence system, while obviously complicated to develop, must not take too long, or it will be obsolete. This problem is not confined to defence systems, but is especially acute when the cost of lagging behind the enemy may be met in blood.

The system, although still undergoing enhancements, is already getting comprehensive field testing in the Falklands. But unfortunately for the Fleet, only three ships have so far been fitted with the system, although the information contained in it can be picked up by any ship over a teleprinter.

In this case, however, vital time and manpower is consumed collating and interpreting the information, which is done automatically by Britmiss.

Another problem is the bug of secrecy. This applies to the development of the system, where a programmer writing one part of it is denied detailed knowledge of the remainder.

Britmiss has to pass words and messages so secret that the Navy did not want them stored on the computer in any form. But as John Graham, manager of Leasco's military group points out, the computer has to create a file to receive these messages. So they have to be on the computer, albeit temporarily.

Another encumbrance for a defence system is that the information has to be as up to date as possible. The information available to Britmiss is typically several hours out of date, so the Navy asked for a "dead reckoning" element to be added to the system.

This would extrapolate from the available information to yield an estimate of the present position of ships.

Another unique feature of this kind of defence system is the encrypting of messages. Leasco achieved this by having code cards selected at random by the computer to keep the enemy guessing. In this way, if a ship was captured by the enemy, the information would be valid for only a few days.

GRAHAM . . . Successful solution to unique problems of building a naval information system.

Experts break new ground

by Donald Kennett

ONE of the first companies to put expert systems on a commercial footing is the three-person company Expert Systems. Incorporated nearly two years ago, the Oxford company has been providing consultancy services in system design.

Last November saw the launch of its first product, an implementation for Digital Equipment minis of the Prolog language developed for artificial intelligence applications 10 years ago at the University of Marseilles.

Initially written to run under the RT-11 operating system, Expert Systems' Prolog-1 interpreter has now been adapted also to run under RSX-11 and design work has been started on versions with which to tackle the much larger market among microcomputer users. By the end of the year versions should be ready to run under CP/M and under Unix on PDP-11s, says Expert Systems' managing director Alex Goodall.

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WHITE . . . "Greater stress on interviewing".

Beware agencies with too many candidates

COMPANIES should beware of recruitment agencies that put forward dozens of candidates for jobs that demand hard-to-come-by specialist skills.

Many agencies do just this, according to KPG Computer Support Services, a UK firm which supplies contract programmers and analysts.

Frank Swift, KPG's manager of systems programming, accuses many agencies of all sizes of being no more than glorified photocopying agencies.

Swift himself joined KPG from a company which hired a number of contract staff, and claims to have found the company's approach refreshing.

"We put more stress on interviewing people," adds Brian White, KPG's 29-year-old managing director.

Swift's criticism of many other agencies is that they have not bothered to make any effort to determine the truth of the claims made on an applicant's CV. Companies, on the other hand, often put little effort into interviewing short-term contractors in the apparently mistaken belief that the agencies have throughly checked them out.

"Some do not even bother to check first before putting someone forward for a job," says Swift.

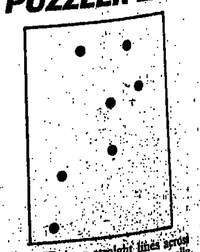
From my own experience, I once signed on with over 20 agencies, and can confirm that half of them took my CV at face value, and only four or five gave me a technical interview . . .

Still, it is arguable whether the agencies should provide thorough vetting. They can hardly be expected to possess specialist staff in all the disciplines.

But the agencies exist to save companies' time and provide the right people. Their strength surely lies in forging close working links with individual companies and being familiar with the particular requirements.

That is why KPG employs someone like Swift, who has experience of programming and analysis as well as hiring contract staff himself.

PUZZLER



DRAW three straight lines across this rectangle, without actually touching any of the seven points in such a way that each point is enclosed on its own in a separate section.

See page 47 for solution

Managing director for Storage Tech

STORAGE Technology UK has appointed **Derek Thompson** as managing director. Former managing director **Colin Cook** has been promoted to head of European marketing at Storage Technology Europe.

Thompson was formerly vice-president of Documation World Trade and after the company's merger with Storage Technology in 1981, became director of European marketing. His previous management experience gained during 15 years in the industry includes posts with NAS, Itel and IBM.

Cook will be looking at new ways to generate business in Europe. He has been with the company since 1979, joining as sales director and becoming managing director a year later. The company says he has been the driving force behind its success in the UK. Storage Technology has grown to $30 million in just over three years.

Wang grows

THE Wang UK User Group has opened membership to users of the Wang 2200 series. It arranges regular product group meetings, for users of OIS and VS equipment and there are a number of special interest groups covering such topics as communications, word processing and Basic. WUG membership already stands at over 100. Details from secretary Ann Turner, 12 Christchurch Road, Bournemouth BH1 3LW. Tel: (0202) 2911111 ext 201.

Distributor

CEMA Business Services has been taken on as the first distributor for Nokia terminal systems. The distributorship is initially worth £200,000 with the Manchester-based CEMA distributing the Nokia 202, 210 and 3276 VDUs, the company's microcomputer and the CRS 200 point-of-sale system. CEMA's managing director **Donald Wright** said he was "delighted" with the deal.

■ **John Walduck** has been appointed product manager for Texas Instruments products at BA Electronics. He joins the company from Unitech, where he was in electronics distribution. Product manager with responsibility for SGS, General Instrument and Beckman products is **Neil Howes**, formerly a product manager at Celdis. **Paul Mears** joins the company as microsystems support engineer. He was previously National Semiconductor franchise manager at Marco Marketing.

■ **John Clarke** has been appointed terminal systems product manager of Nokia (UK). He joins the Finnish-owned company from Honeywell, where for three years he was software development manager.

■ **Frank Rainsborough** has been appointed Southern area sales manager, business machines division, at Sanyo Marubeni. He was formerly in microcomputer hardware sales at Gordon and Gotch.

■ **Stephen Crabtree** has been appointed chief software analyst at the software division of Thorncroft Manor Services. He joins the company from United Computing, where he was the technical liaison manager, developing financial and communications packages on microcomputers.

■ **Michael Coffee** has been appointed director of industry marketing at Modcomp. He has been with the company for six years and posts have included director, systems design and latterly business manager, power/process control.

■ **John Richards** has joined Remsdaq as senior project engineer. He was formerly in data acquisition at Plessey Secure Systems. Also joining the company from Plessey Secure Systems is **Mark Dooley**, who becomes senior applications programmer. **Brian Ward** joins Remsdaq as head of testing. He was previously on commissioning work with ICL. **John O'Connor** has been appointed applications programmer. He was formerly a design engineer with Session Scientific.

■ **Philip Sutcliffe** has joined Rair as a sales executive covering the Southern Home Counties. He joins the company after five years with Hewlett Packard, where he was selling systems for technical applications.

■ **Mike Howes**, who for the last seven years has worked for the Hotel Industry Training Board, has joined ADP Hotel Services as sales executive for the UK central division. The company specialises in supplying computer systems to hotels.

■ **Doug Staples** has been appointed regional sales manager for the South of England at Micomborer. He has been in data communications sales for 14 years.

■ **Mel Pashey** has joined Arrow Business Computers as sales director. His previous experience has been at Kienzle Data Systems and Sperry Univac.

■ **Nick Brewin** and **Alistair Hardy**, both formerly with ICL, have joined Zynar as sales executives.

DIARY

MAY 26

AGM Wine and Cheese. IDPM Kent branch. The Oak Room, Royal Star Hotel, Maidstone. 7.30.

Computer Networks in industry. BCS South Yorks branch. Telephone House, Charter Row, South Yorks. 6.00.

BBC microcomputer project. IEE. IEE, Savoy Place. London. Details 01-240 1871.

MAY 28

Computer aided design and manufacture. IEE. IEE, Savoy Place, London. Details 01-240 1871.

JUNE 2

The X and Y of computer graphics – news and views on the way to present computer data as a picture. IDPM Central London Branch. Altergo Software, Imperial House, 15-19 Kingsway, London. 6.30.

Impact of new technology on personal life. IDPM Sussex branch. Venue to be announced. 7.00.

JUNE 7-8

Computers in medicine. IEE. IEE, Savoy Place, London. Details on 01-240 1871.

JUNE 8

Word Processing and COM. BCS Microform Group. NCR Theatre, Marylebone Road, London NW1. Details Chris Marles 01-434 1031. £10 BCS members, £12 non-members.

JUNE 9

Meeting. BCS Database Group. Details Ian MacDonald 01-405 8233.

JUNE 20

Visit to the Midland Railway Trust. BCS Nottingham Group. Details Ray Fowler on Nottingham 415415 ext 4725.

JUNE 23

Fotnet and Pet computer networks. BCS Sussex Microcomputer Group. Meeting Room, King and Queen, Marlborough Place, Brighton. 7.30.

Timothy Johnston is to take charge of BIS Software's new Bahrain office as general manager. Johnston, who has been with BIS for three years as the company's London marketing manager, is an associate of the Institute of Bankers. He spent 13 years with the Hong Kong and Shanghai Banking Corp and has worked in data processing in Hong Kong, Thailand and Singapore. Also leaving to fly the BIS flag is Charles Barrass, who has been appointed general manager of BIS Banking Systems' Singapore office. He joined the company in 1978 as a senior consultant, switching later to international marketing.

CII-HB appoints chairman

JACQUES STERN has been co-opted to the board of directors at CII-Honeywell Bull to replace **Roger Faroux**, who has resigned. Stern has also been named chairman of the board.

In 1964 Stern founded SESA (Société d'Etudes des Systèmes d'Automation) and became chairman and managing director. The company started to develop internationally in 1970, with the establishment of a firm in Germany. This was followed by companies in the US, the Benelux countries and Italy. In 1979 it formed a jointly owned subsidiary with CII-Honeywell Bull.

EEA chief

THORN EMI's chairman and managing director **Tom Mayer** has been named president of the Electronic Engineering Association. An electronics veteran, Mayer spent 32 years with Marconi, latterly as managing director of Marconi Communications Systems.

the proven Relational Database System.

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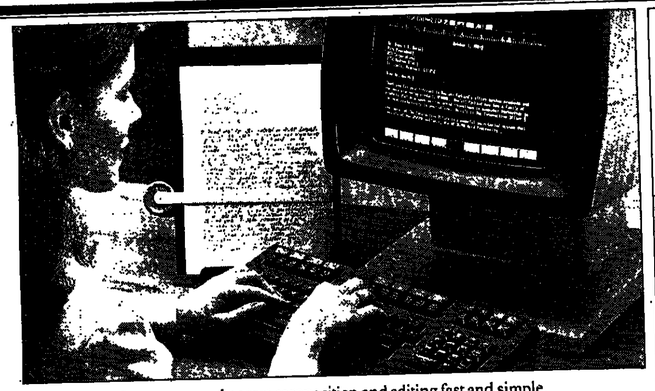
RAPPORT

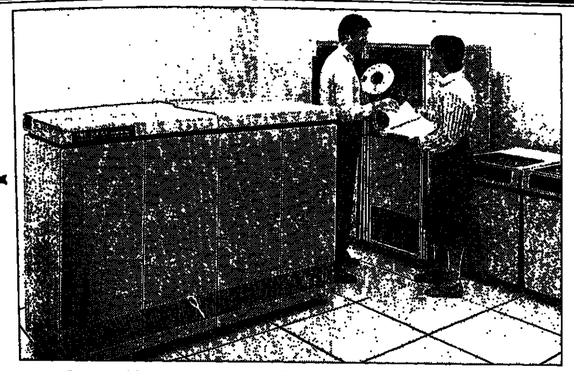
COMPUTER WEEKLY, May 20, 1982

The Interactive Office.



Our new word processor makes text composition and editing fast and simple. Because it is linked to the computer, it can also process data.

This manager's workstation gives business professionals easy access to the information they need for decision-making, without demanding an understanding of computers.



Our new high-performance HP 3000 Series 64 can handle 100 interactive users while processing big batch jobs like the company's payroll.

Hewlett-Packard announces a major contribution to productivity in the office. It allows you to integrate the four major resources your staff need to do their jobs faster and more effectively – document management, personal computing, support for decision making, and communications.

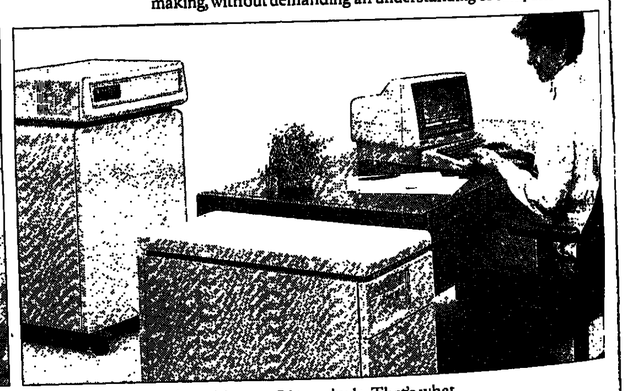
Based on the expanded family of HP 3000 computers, The Interactive Office brings powerful new word processing, data processing and business graphics, capabilities to a wide range of users, including secretaries, managers, and other business professionals. Now, much needed power and vital information can be placed in the hands of all who need it – whether they work within the same office or on opposite sides of the world.

If you'd like to see The Interactive Office at work, call your local Hewlett-Packard sales office and we'll arrange a demonstration. You'll see what a difference it can make to your business today, and how it can grow to assure even greater productivity tomorrow.

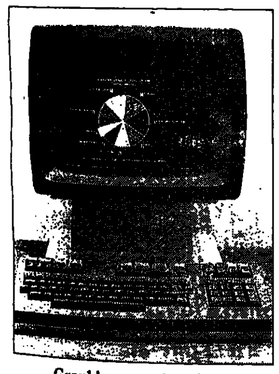
For more information, send for our new brochure "The Interactive Office". Just post the coupon. Or simply call your local HP office.

Hewlett-Packard Ltd, Winnersh, Wokingham, Berks., RG11 5AR. Wokingham (0734) 784774.

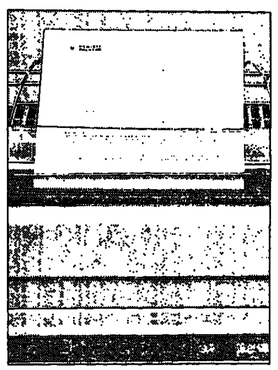
Our personal office computer, the HP 125, is specially designed to handle a manager's individual needs – including word processing, graphics, and data analysis. It communicates with big computers, too.



Economical computing with up to 56 terminals. That's what you get from the new HP 3000 Series 40. Use it as a central processor in a small office or as part of a network.



Graphics created on this low-cost terminal can be plotted on paper or transparencies.



High-quality printing for business correspondence and reports can be generated on this letter-quality printer.

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Local HP offices are also at Bristol, Redhill, Southampton, London Colney, Altrincham, Solihull, Castleford, South Queensferry – Scotland, Dublin – Ireland.

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Electronic mail and filing for individual users provides the electronic equivalent for an in-tray, out-tray and filing cabinet.

High-volume printing on this laser printing system virtually eliminates pre-printed forms, letterhead stationery and long queues at the copier.

Data communications can expand The Interactive Office across the country or around the world.

Report generation is simplified by new software tools which let business professionals create reports and summaries in minutes without programming.

Security at 19p a card

INCREASING cost of software, with the need to protect stored information, have made some form of company security a virtual necessity.

One answer could be the Multishot 84 photo ID card system from Shackman Instruments which provides, says Shackman, laminated, tamper-proof, photo ID cards, at 19p each.

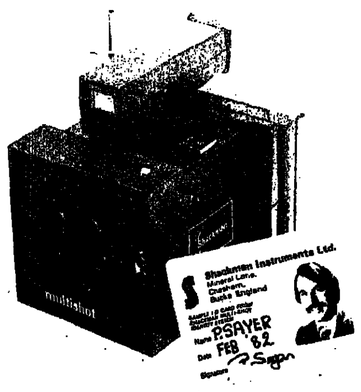
The heart of the system is the Multishot 84 camera which can simultaneously take one, two, three or four identical, ID size, photographs, one for the card, one for personnel, one for the security and one for the new receptionist.

Alternatively if multiple photographs are not needed, four different photographs can be taken with a subsequent saving on costs.

The system uses colour or black and white peel-apart Polaroid film.

The kit comes complete with a laminating machine which is used to bond the photographs and completed ID card into a plastic card.

The kit also includes a tripod and flash gun (or professional lighting), and a punch to cut the photographs out to exactly the right size, says Shackman.



Shackman's ID card camera.

The end product of the system is a photo ID card which can be carried like a credit card or fitted with a pressure clip and worn on a lapel, pocket or belt.

The Multishot system is easy to use, and Shackman Instruments says it uses the latest assembly techniques.

Shackman Instruments (CW), Mineral Lane, Chesham, Bucks HP5 1NU Telephone: (0494) 784451.

Printer system offers savings to mini users

A REMOTE Line Printer System (RLPS) from Digital Associates – unique because it operates off the printer port instead of the communications port – allows minicomputer users substantial savings in data communications applications by reducing transmission time and enabling the line printer to operate at its full capacity, claims the manufacturer.

The new system can be installed on a broad range of minicomputers without modifications to hardware, software or operating systems.

Unlike a remote printer that operates through the communications port, the RLPS allows a line printer to run at the fully rated speed. For example, a 300 lpm printer will run at the rated speed over a 2400 baud line (dial-up or dedicated) at an average of 50 characters per line; a 600 lpm printer will operate at rated speed over a 4800 baud line (dial-up or dedicated) and a 1,000 lpm printer will perform at rated speed over a 9600 baud line (dedicated).

Other claimed advantages of the RLPS include:

- The elimination of minicomputer processor degradation that occurs when a line printer is operated through the communications port.
- Because the RLPS compresses data so that only the characters that actually print are transmitted, substantial savings in line use charges are possible. Data compression also results in throughput speeds at least double those of existing RS232C devices in line printer environment.
- The RLPS eliminates the need to pack and ship printed output from a central site CPU to remote locations – and saves on the manpower involved in this operation as well.

Digital Associates Corporation (CW), 1039 East Main Street, Stamford CT 06902. Tel.: (800) 243-9054.

Kennet's Inca 2000.

Eliminating losses

WITH the Inca 2000 intelligent acoustic coupler system from Kennet Micro Systems any information losses due to noise or interruptions in transmissions are virtually eliminated, say the manufacturers. This is achieved using a Full Duplex System which appends error correcting codes to blocks of data prior to transmission.

All data is transparently checked for errors on receipt and if any are present the originating terminal retransmits all relevant passages automatically, says Kennet.

Kennet Micro Systems (CW), Woodland Industrial Estate, Eden Vale Road, Westbury, Wilts BA13 3QS. Telephone (0373) 864962.

With GE 2120 printers in your network, word gets around fast.

Immediate, reliable hard copy data communications with a sustained 150 cps rate. Whether you're linking several departments within the same facility... several buildings within the same city... or interconnecting print stations in cities around the world, GE 2120 printers are ideal in electronic mail or other communication network applications.

Stylish, compact, lightweight, quiet and easy-to-use, the energy efficient GE 2120 comes with an outstanding list of standard features. And if you need more, we have more than enough options to choose from.

GE IS YOUR BEST CHOICE FOR QUALITY OPTIONS.

A 32K Text Editor allows you to work off-line to reduce on-line time and communication charges as much as 70%. Transmission speeds are available from 110 to 9600 baud.

A range of data buffers from 2K to 16K capacity provide the throughput efficiencies you need at high transmission speeds.

You get choices in paper handling: friction, pinfeed platens, or adjustable tractors. And a range of other useful options and accessories is available to meet your specific needs.

YOU'LL FIND WE HAVE MORE THAN ONE MODEL OF EXCELLENCE.

General Electric also offers the GE 2030 printer. Identical to the GE 2120 in standard features and available options, the GE 2030 prints at sustained speeds up to 60 cps. Of course, there is one other difference... it also costs less. So if you don't need the speed, selecting the GE 2030 may be your best choice.

MATCH THE PRINTER TO THE PROBLEM.

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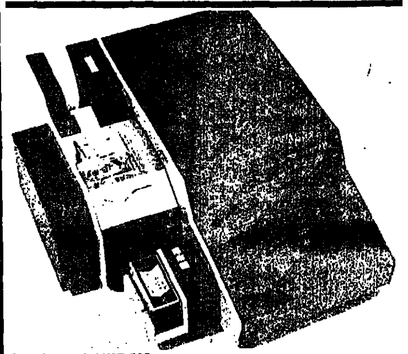

Data Dynamics' ZIP 585.

Zip go those problems

THE Data Dynamics ZIP 585 intelligent paper tape punch and reader can be used in message switch and other communications applications to solve problems.

The 585 has two ports: one connected to the line is compatible with either five level Baudot or eight level Ascii code conventions, and the second is permanently configured for use with an Ascii terminal (normally a VDU). In this configuration, the ZIP 585 will read and/or punch paper tapes in Baudot or Ascii code, from data derived from either the Ascii terminal, the five or eight level message switch or the paper tape reader.

One application is to monitor the line at night, or at any time when receive terminals are unattended, to make a security tape copy of incoming messages and avoid lost messages should a printer malfunction.

Another important application is 'torn tape' communication between an eight level system such as a computer or word processor and a telex machine.

The two ports and the punch all have their own individual buffer stores of 500, 500 and 2,000 characters respectively.

Data Dynamics (CW), Data House, Springfield Road, Hayes, Middx, Telephone: 01-848 9781.

VDU has 25th line

A VISUAL display terminal, the Midas VI, announced by MCS Mini-Computer Systems, is designed for use with the Micos range of Minicomputers. It is available in a choice of white, green or orange screens.

In addition to the standard 1920-character display, formatted as 24 lines by 80 columns, the new model features an optionally visible 25th line. This provides the operator with VDU status information during normal operation, and the engineer with diagnostic error messages during field service maintenance.

The Midas VI offers 32 function keys and 96 displayable UK Ascii characters which are formed by a 6×8 dot matrix in a 7×10 dot field. Character legibility is enhanced by the terminal's ability to shift dots horizontally in half-dot increments. The detachable keyboard incorporates a separate numeric pad with its own "enter" key to simplify the high speed entry of numeric information.

The 25-line Midas VI VDU.

Cross Communications (CW), Wiltron House, 48 Broadway, Maidenhead, Berkshire SL6 1LU Telephone: (0628) 70209.

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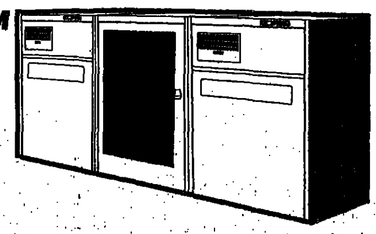

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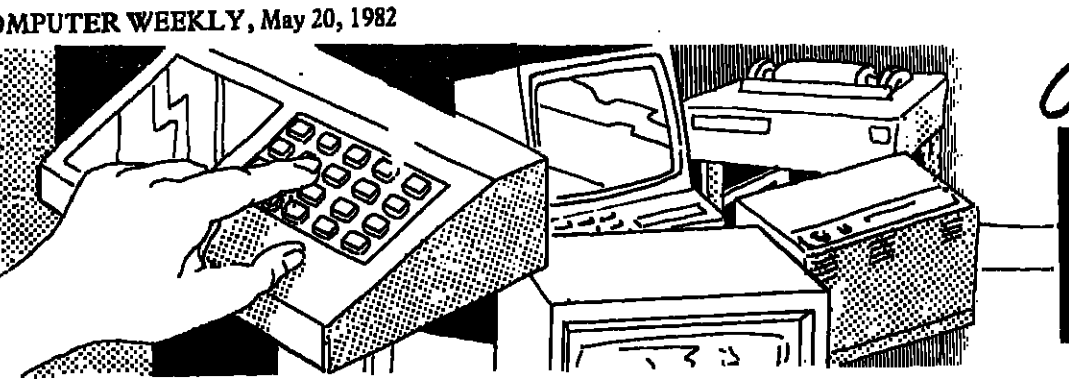

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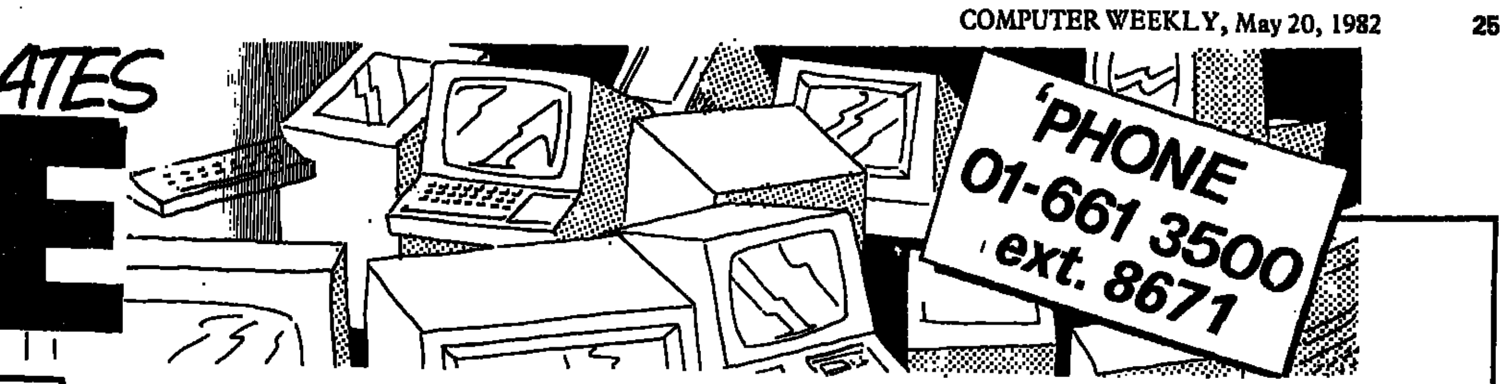

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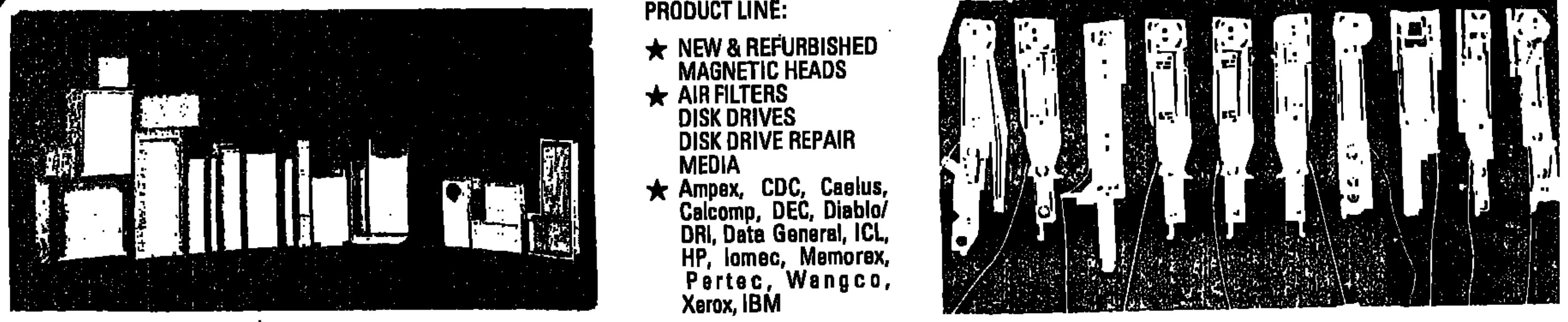

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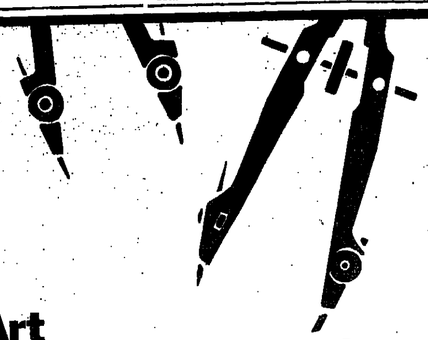

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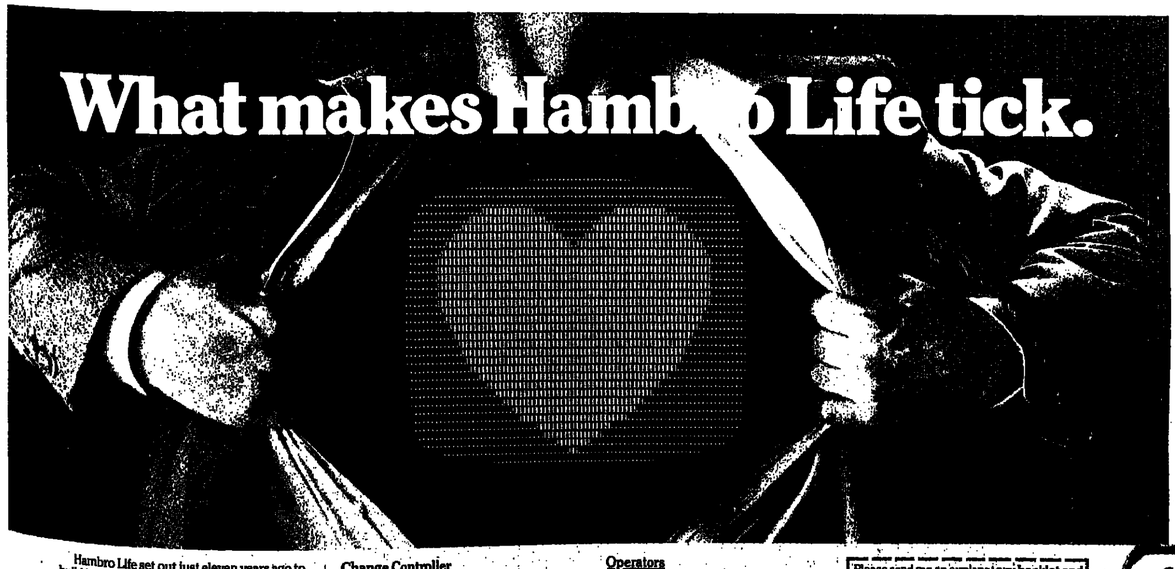

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ICL COBOL VMEB SOME WITH IDMS or TPMS
40 REQUIREMENTS
ASAP

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TO START FROM NOW-JULY 82
LONG TERM ASSIGNMENTS

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Analyst Programmers – 6 months assignment – ASAR – IBM COBOL, IMS DB/DC JCL, TSO/SPF. Ref. BE 47/A-B C-F.
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PROGRAMMER/ANALYSTS – PDP MUMPS urgently required, 3 month plus assignment.
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MIDLANDS & NORTH
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IBM, PL1 All Levels
IBM CICS DL1 COBOL
IBM COBOL with IMS
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Analysts Various Systems
PDP RSX11/M BASIC + or BASIC + 2
PDP/RSTS/E BASIC +
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IBM, ANALYSTS manufacturing background ASAP.
UNIVAC OS3 RPG PROGRAMMERS
Contact: NEIL E. SMITH

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Two urgent requirements for Senior System Analyst/Project Leader with DEC and Manufacturing experience for Thames Valley & Cambridgeshire. Salary to £15K plus comprehensive relocation package.
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(9812)

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Experienced Analysts and Programmers
Dorset

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If you are looking for a challenging position calling for imagination and effort we would like to hear from you. Specifically, we are looking for analysts/programmers who have had at least five years' experience in the development of real-time software systems, particularly for communications.

The work involves design development and integration of communication equipment and management information systems.

A competitive salary will be negotiated in line with your experience. Benefits are those you expect of a major organisation and include generous assistance with relocation where appropriate.

In terms of location Christchurch is ten minutes walk from the sea, with the New Forest a short car drive away. On site, sports and social facilities are excellent. Local leisure activities would be hard to beat and there's a varied range of housing available.

For further information please contact Jane Hilliker on Christchurch (0202) 486344 or forward a detailed c.v to Plessey Defence Systems Limited, Grange Road, Somerford, Christchurch, Dorset.

We look forward to hearing from you

PLESSEY
electronic systems

Information Systems Design
Matlock £8,190-£9,528

Derbyshire County Council need a Senior Assistant (monitoring and information) to design and implement new computer based information systems for the planning department.

It's a challenging position, involving the development of mathematical/statistical models and techniques – primarily for demographic work – in liaison with the County Treasurer's Computer Division.

The successful applicant will be expected to have a degree or diploma in planning, mathematics or related subjects and to have had experience in this work, preferably in a planning department. Experience of database systems would be an advantage.

The post carries a casual car user allowance and in appropriate cases the County Council will assist with any removal expenses and lodging or travelling allowances.

Application forms and job description are available from the County Planning Officer, County Offices, Matlock, Derbyshire DE4 3AG (Telephone Matlock 3411, extension 7122). Further detailed information can be obtained by ringing Wally Gowing on Matlock 3411, extension 7155.

Completed application forms should be returned to the County Planning Officer, County Offices, Matlock by 11 June, 1982.

Derbyshire County Council is an equal opportunity employer.

(9620)

DERBYSHIRE
County Council

PROGRAMMERS! KESTREL WANT MORE . . .

Kestrel Data Storage & Management, Specialises in providing sophisticated storage and cataloguing services for the oil exploration industry.

The company is expanding and requires more programming staff to work in a small friendly Computer Department on a CMC Reality Level 4 Mini Computer.

The Computer Department is situated at our Southwark SE1 H.Q. which is near main B.R. and L.T. commuter routes.

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Approximately 4 years' experience required of which some must be of using BASIC on Mini Computers.

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For all the above posts, experience on CMC Reality/Sovereign will be a major advantage.

Call Valerie Shackleton on 01-633 9063.
No Agencies please.

(9879)

ANALYST PROGRAMMER

South Coast **Salary up to £9,500**

Ricardo are consulting engineers to the world's major internal combustion engine manufacturers. An analyst/programmer is urgently required in the Company's EDP Department which is equipped with an ICL 2496 running under exec 5s using IDMS Prosper plus, Status, OMAC and LUCRE.

The work, which will be split equally between analysis and programming, will include the enhancement of the existing database system and involvement with the design and implementation of new applications.

Applicants may be male or female but should be not less than 25 with at least 2 years' analyst experience and 2 years' COBOL programming on database installations. A knowledge of ICL equipment and operating systems would be desirable but not essential.

This exciting appointment in a small and friendly but advanced EDP Department offers a good opportunity for gaining further IDMS experience together with excellent fringe benefits including an annual bonus, free life assurance and assistance with relocation where necessary.

Apply in writing or telephone Mr R. Barrow, Personnel and Administration Manager, Ricardo Consulting Engineers, Bridge Works, Shoreham-by-Sea, West Sussex BN4 5FG. Telephone 079 17 5611.

PLYMOUTH POLYTECHNIC

HEAD OF COMPUTER CENTRE

The Centre serves the rapidly growing Computing needs of the Polytechnic. Applicants should have appropriate experience in either education or industry and the ability to provide leadership to this important Centre.

Salary: Head of Department Grade V
£13,914-£15,462
(under review)

Application form to be returned by Friday, June 11th, 1982, can be obtained with further particulars from the Personnel Officer.

(9592)

Drake Circus, Plymouth Devon 4 BAA

logistix Logistix Recruitment Limited
10 Grenville Place, London SW7 4RW

Telephone 01-373 3063

Jnr. Macro-11 Progs.
E.E.C.: Pkg. to £12k

A number of Macro-11 Programmers, willing to relocate overseas for a minimum of 12 months, are required to join the Italian and German offices of a leading British Systems and Software House. Suitable applicants will be graduates with a minimum of 12 months' real-time programming on a PDP-11 configuration running under RSX 11/M. Fluency in Macro 11 is, of course, essential, but candidates able to offer additional skills in Fortran or Pascal are particularly encouraged to apply. Applications experience should, ideally, have been gained in a data communications or process control environment. **Ref. L/20/A**

Pascal/Unix
South England: Salaries to £10.5k

A Systems and Software supplier, renowned as one of the U.K.'s leading high technology companies, is currently seeking PASCAL Programmers for its software development group based in Southern England. Suitable applicants will be graduates in a numerate discipline with at least one year's industrial experience in a real-time scientific environment. It is essential for all positions that you offer fluency in PASCAL preferably gained on a mini or micro-computer running under UNIX. In particular, our client will favour applicants who have had exposure to PDP-11 or VAX 11/780 machines. For the more senior positions, you should have some knowledge of Computer Aided Engineering, and, obviously, demonstrate management potential. **Ref. L/20/B**

RSX-11 Applications & Syst.
Hants/Surrey: Salary to £12k

On behalf of the Consultancy and Software Services Division of an E.E.C.-based company we are seeking a number of Systems Engineers and Applications Programmers. Software programming expertise should include fluency in a high level language such as Pascal or Fortran, whilst some involvement with an Assembler will be considered a useful secondary programming skill. In certain cases candidates must have actively participated in the development of a distributed processing system where either PDP-11/RSX or VAX/VMS hardware and software is utilised. Additionally, the company wishes to recruit for its Research & Development Unit a number of Programmers who are familiar with M.O.D. hybrid systems where stringent programming and design specifications within a multi-microprocessor environment are employed. **Ref. L/20/C**

Data Communications
Central London: Salary to £13k

A renowned supplier of Hardware and Software Systems is seeking a number of Data Communications and Telecommunications Designers/Engineers for its Central London operations. Successful candidates should have at least one numerate degree and be fully familiar with recent product developments in the areas of Local/Remote Area Networks, Word Processors and Office Automation Systems. Of special interest will be those candidates who have a profound knowledge of data communications, protocolling techniques, ie X-25, HDLC/SDLC. Candidates who have had recent experience of software programming and systems design in a high level or block structured language will generally receive a salary premium. Good personal presentation skills are of paramount importance since you will be expected to liaise with both technical management and non-technical personnel. All positions will entail a degree of travel within the Home Counties areas and occasionally overseas **Ref. L/20/D**

Graphics/CAD
Home Counties: Salaries to £11k

A market leader specialising in the production of computer systems for design applications is currently seeking additional Systems Programmers and Applications Support Consultants. Suitable applicants will be numerate graduates, preferably with a degree in either Mechanical or Civil Engineering. Subsequent industrial experience should include at least one year's Fortran or Assembler programming experience in either a technical or scientific environment. In particular, knowledge of Finite Element Modelling, Numerical Control or Computerised Drafting Systems would be of distinct advantage. All positions will involve a degree of national and international travel and, in certain circumstances, a company car will be provided. **Ref. L/20/E**

Management Consultants
Central London: Salaries to £18k + Car

A U.S.-owned international Consultancy is currently seeking additional Management Consultants for its Central London operation. Suitable applicants will be graduates who have at least five years' data processing experience and have probably progressed into a management role. You should offer a wide-ranging knowledge of hardware and business applications, but of paramount importance will be the ability to identify problems from both a business and technical point-of-view and to communicate with personnel at all levels. In particular, our client has a stated preference for applicants who have had exposure to IBM hardware and are familiar with structured design techniques, database management systems or networking. The above-average salaries offered reflect the importance of employing Consultants of a high standard to maintain the Company's excellent professional reputation. **Ref. L/20/F**

Comms. S/W Designers
South Wales: Salaries to £11k

A world-leading supplier of telecommunications equipment has a number of requirements for Communication Software Designers to join its Research and Development facility. All candidates must possess at least one degree in Computing Science or Electrical/Electronic Engineering and have had two years, or more, in an industrial environment. Past responsibility for hardware implementation, as well as software design of low level protocols up to, and including, Transport Service will be favoured. Applicants should, preferably, have hands-on experience with a leading MDS and be fluent in an Assembler and one or more high-level block structured languages. **Ref. L/20/G**

Firmware Programmers
Cambridgeshire: Salary to £10k

A hardware manufacturer and software supplier, with a rapidly expanding customer base, has a number of vacancies in its Research and Development Department. Applications are invited from those with experience in the design and production of single or multi-board computers, interface design and microcode assembler programming. All candidates must be graduates and thrive on working in a loosely structured but dedicated environment where technical expertise is highly rewarded. **Ref. L/20/H**

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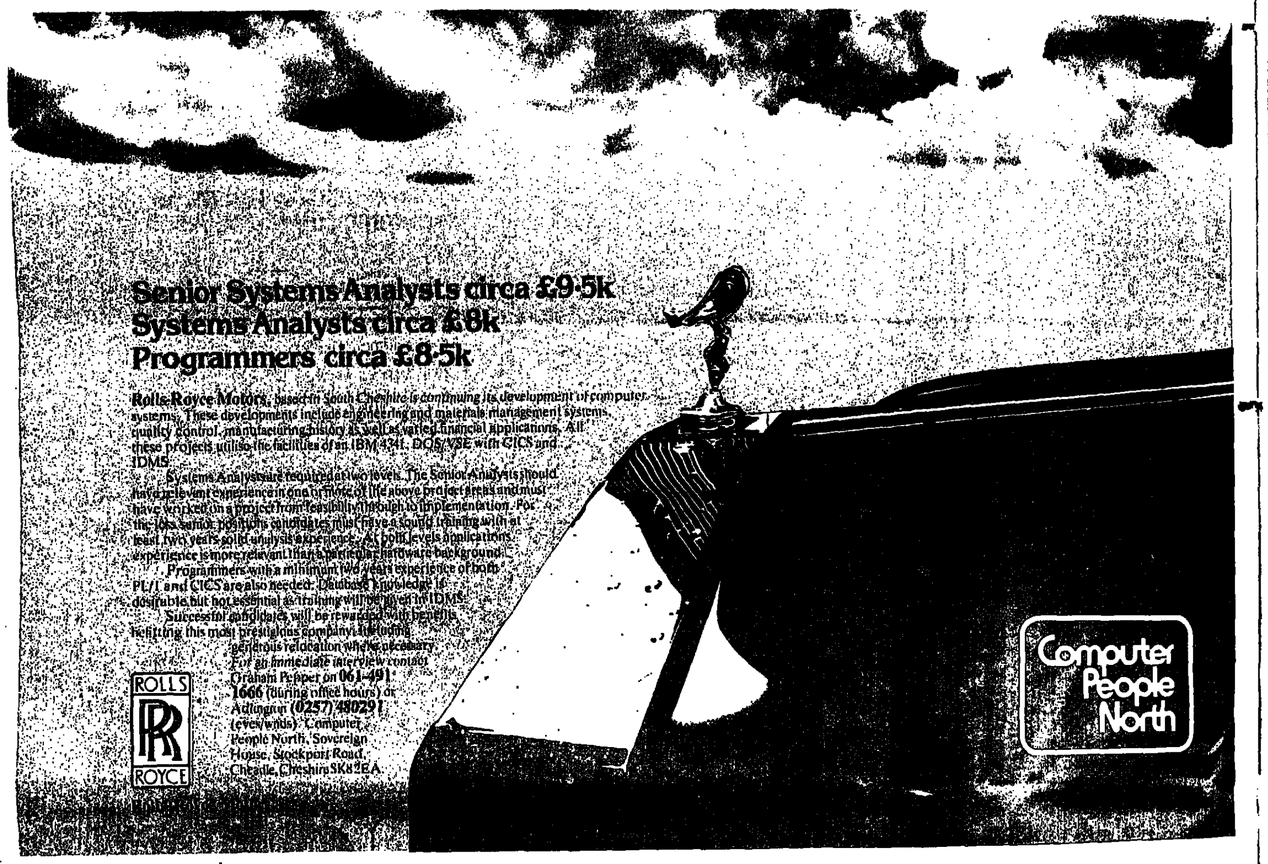

Senior Systems Analysts circa £9·5k
Systems Analysts circa £8k
Programmers circa £8·5k

Rolls-Royce Motors, based in South Cheshire is continuing its development of computer systems. These developments include engineering and materials management systems, quality control, manufacturing history as well as varied financial applications. All these projects utilise the facilities of an IBM 4341, DOS/VSE with CICS and IDMS.

Systems Analysts are required at two levels. The Senior Analysts should have excellent experience in one or more of the above project areas and must have worked on a project from feasibility through to implementation. For the less senior positions candidates must have a sound training with at least two years' solid analysis experience. At both levels applications experience is more relevant than a particular hardware background.

Programmers with a minimum two years experience of both PL/1 and CICS are also needed. Database knowledge is desirable but not essential as training will be given in IDMS.

Successful candidates will be rewarded with benefits befitting this most prestigious company including generous relocation where necessary.

For an immediate interview contact Graham Pepper on **061-491 1666** (during office hours) or Adlington **(0257) 480291** (evenings). Computer People North, Sovereign House, Stockport Road, Cheadle, Cheshire SK8 2EA.

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Wednesday, June 16, 1982

Dublin
New Jurys Hotel
Thursday, June 17, 1982

We offer salaries of up to $40,000 per annum with generous relocation allowances for you and your family. In addition, we have generous company subsidized life, health and dental insurance plans for you and your family. To arrange for an expense paid interview in either of the cities listed above, please rush your resume or call Ms. Angela Nanni at (01) 405-8546

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(9572)

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PDP 11/70s **BASIC +** **RSTS/E**

The data processing group of a multi-national, British organisation also functions as a consultancy for the UK subsidiaries and two additional staff are now required to strengthen the team. The Company is well-established with interests in many different countries contributing to an annual turnover of approximately £250 million.

Programmer

Bletchley/City **c. £9,000**

To be primarily responsible for a major subsidiary, this person will require strong interpersonnel skills as they will act as a link between London and the users in Bletchley. Applicants should have a sound knowledge of **BASIC +** or **BASIC+2** and be able to operate effectively under minimum supervision.

Analyst/Programmer

The City **c. £10,000 + Car**

In addition to 2-3 years' sound commercial experience in a **RSTS/E** environment, candidates should demonstrate the ability to define and work within disciplined timescales. The successful applicant will be responsible for the development of a wide range of commercial applications for users in the City and other offices around London.

Both of these positions involve a large proportion of development projects using on-line software and DP staff are encouraged to expand their career potential and promote their services within the organisation. Employee benefits include a pension scheme with free life assurance, subsidised meals, an interest-free season ticket loan and two reviews per year.

For further information regarding these opportunities, contact our **London office** (01-353 0981) quoting reference S1/1305.

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(9831)

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An International Bank based in Germany is seeking the following staff:

MANAGER, SYSTEMS & PROGRAMMING
DM67,000 to DM80,000

★ Minimum 3 years in a supervisory capacity with exposure to IBM mainframe running under DOS/VSE, COBOL, RPG, ASSEMBLER.
★ Degree in Computer Science desirable.

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★ Ideally to commence in mid-June although a later start possible.
★ Training given in U.S.A. for 3 months.
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★ Knowledge of Assembler, DOS/VSE and RPG II desirable.

Knowledge of German is not essential for either of these positions.

TIMESCALE: Applications in by May 24.
PRE-SCREENING: Week commencing May 24.
FINAL INTERVIEWS BY FRANKFURT REPRESENTATIVES June 3-4.

TELEPHONE: SUE ASHBY and ANNE BETTS 01-836 6775
0844 53531 (evenings)

(9813)

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£7,000-£10,000

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Please ring the Personnel Department, High Wycombe (0494) 33333 or write to the Personnel Manager, Instron Limited, Coronation Road, High Wycombe, Bucks HP12 3SY.

Men or women may apply

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SOFTWARE ENGINEER **UP TO £15,000**
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A Senior Management position with plenty of opportunity for personal contribution with medium sized Software House in East Berkshire.

ANALYST PROGRAMMER **£8-£11,000**
IBM/DG/HP3000 COBOL

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TEL 01-866 0133 (24 hr. Ans)

(9583)

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CUSTOMER SUPPORT EXECUTIVES

A major manufacturer of computer systems ranging from single-terminal small business systems to multi-terminal computer configurations needs to appoint Customer Support Executives.

The company has embarked on creating a new corporate identity which involves a revised sales and support strategy with many new exciting products available (and more in the pipeline!). The Customer Support Executives will play a leading role in assisting the sales force with new prospects and existing customers within the South-West (commencing at Chichester and beyond) of England. Therefore, we would like to hear from you either if you have worked in a similar environment or feel you have the required personality and ability together with business systems and programming experience to take on such a demanding challenge.

Interested? Then contact Dennis G. Hall

D.G.H.

Management & Recruitment Consultants
Suite 2, Albion Buildings
Bank Hill, London, EC1
Tel. 01-248 3434 (Office Hours)
606 8722 (evenings and weekends)

APL

c.10k to 13k

Central London

BUPA, leaders in the fast growing field of health insurance, are rapidly expanding their use of APL based systems. The actuarial department, which is a major user department, is undertaking a continuing programme of major APL applications. These are being implemented using a powerful in-house mainframe installation linked to colour VDU's.

The initial phase of the planned APL systems was implemented using an APL software house. We are now building up our own in-house APL team to carry on the rapid developments required, and wish to recruit two further APL specialists.

The ideal candidates will be graduates with at least 2 years' good, solid APL programming experience.

The starting salary is negotiable, depending on experience, and will not be an obstacle for the right candidate. The benefit package will include mortgage subsidy, season ticket loan, pension scheme, free BUPA and subsidised staff restaurant.

If you'd like to talk to someone capable of discussing the technicalities then you should ring Phil Chastney or Michael Moliver. Alternatively you can write to, or ring the Personnel Department for an initial meeting where we can discuss the longer term possibilities.

Personnel Department,
BUPA, Provident House,
Essex Street, London WC2R 3AX.
Tel: 01-353 9451.

BUPA

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nihe limerick

Planned as Ireland's first technological university, The NIHE, Limerick, Ireland has already gained widespread recognition for its contribution to the country's industrial development. Construction has now commenced on a new 17,000m² complex, which will double the range of laboratories and specialist business facilities. there are vacancies for:

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LECTURERS/ASSISTANT LECTURERS

Due to the growth of programme offerings in the area of computer systems, there are now a number of vacancies for staff whose expertise lies in the following areas.

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- OPERATING SYSTEMS
- COMPILERS
- COMPUTER GRAPHICS
- SYSTEMS ANALYSIS AND DESIGN/DATABASE MANAGEMENT SYSTEMS
- DATA COMMUNICATIONS/DISTRIBUTED COMPUTING/NETWORKS
- MATERIAL REQUIREMENTS PLANNING
- COMPUTER ASSISTED INSTRUCTION

COLLEGE OF ENGINEERING & SCIENCE

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LECTURER/ASSISTANT LECTURER

Applicants should have significant experience of analogue and digital circuit design and implementation. Experience in industrial applications including transducers, instrumentation, signal conditioning, data transmission, modern power electronics and electronic production techniques is particularly desirable

COMPUTER ENGINEERING
LECTURER/ASSISTANT LECTURER

Applicants should have expertise and experience in one or more of the following operating systems, systems software, high level language compilers and interpretors, computer hardware, interface design, inter-computer communications, networks. Minicomputer and microcomputer expertise would be a decided asset

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SENIOR LECTURER	IR£13,828-IR£18,265 p.a.
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ASSISTANT LECTURER	IR£ 9,206-IR£11,367 p.a.

Application material available from The Personnel Office, The National Institute for Higher Education, Limerick, Ireland to be completed and returned by Friday, 18 June, 1982

English subsidiary of Multi-National Company in the Finance Sector requires:

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and
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for
IBM System 38

Sound knowledge of RPG Programming coupled with on-line experience. Working on a wide range of development projects. Fully utilising the facilities offered by System 38.

Based in Winchester with a salary dependent on experience.

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(9628)

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Software Designer

The Diamond Trading Company, an associate of the De Beers Group, has built a new research centre in Maidenhead to develop and build equipment for use within the industry.

The minicomputer section is responsible for providing the computing facility within this research centre. It has a VAX 11/780 and runs a wide variety of mathematical and engineering software.

There is currently a vacancy for a software designer to work on minicomputer and microprocessor based designs and to depurise for the head of the section.

The department is active in a variety of fields including research, electronics, computing and precision engineering, giving the successful applicant the opportunity to display his or her skills in solving a wide variety of problems.

Applicants should hold a suitable degree or other qualification, and have at least 5 years' experience working with computer-based systems. A thorough grounding in mathematics would be a distinct advantage as would experience of DEC or INTEL products.

The Department is based in Maidenhead. The successful applicant would be expected to travel to the Company's head office in London frequently and to overseas locations occasionally. An excellent benefits package is offered including a non-contributory pension scheme and staff restaurant.

Please write with full details to M. H. Boorman, Personnel Manager, 17 Charterhouse Street, London ECIN 6RA.

an associate of the **De Beers Group**

PROCESS CONTROL

South Coast — to £9,500 neg.

Our client, a leading designer of custom built process control systems is currently undergoing a major expansion programme. To ensure the success of this programme, our client is seeking to recruit a further high calibre

APPLICATIONS PROGRAMMER

to develop software packages for a wide range of control applications.

This is a challenging position likely to appeal to graduates with a minimum of 2 years' experience of process control applications software looking for an opportunity to work in a stimulating environment where their innovative talents will influence the continued growth of the company.

Applicants with a working knowledge of APL will be of extreme interest, but training is available in this very versatile language.

If you would like to discuss your prospects and the excellent negotiable package, including full relocation expenses to this idyllic location then telephone Tony Tobins or Phil Dungey on:

0293 543431 (9 a.m. - 6 p.m.)
(out of hours answering service)

or write, enclosing C.V. to:

ATA ENGINEERING RECRUITMENT
34 The Boulevard
Crawley, Sussex

ata (9603)

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LECTURERS I
Required for 1st SEPTEMBER, 1982
To teach
COMPUTER STUDIES AND DATA PROCESSING
SALARY: BURNHAM, plus £498 London Allowance

Application forms and further particulars are available from the Principal of the College to whom completed forms should be returned within 14 days of the appearance of this advertisement.

(9622)

LEICESTER POLYTECHNIC
School of Mathematics Computing and Statistics

LECTURER II IN OPERATIONAL RESEARCH
(Post 19)

The Lecturer will join a group of OR specialists teaching on degree and postgraduate courses in a variety of disciplines. Applicants should have an appropriate degree with experience in industrial/commercial OR. Encouragement will be given to continue with consultancy/research. Experience in teaching statistics would be welcome.

LECTURER II IN INTERACTIVE COMPUTING
(Post 76)

Candidates should be appropriately qualified to teach computer science topics on a wide range of courses up to first degree and possibly Masters degree level.

Applicants having interest in programming, software engineering or operating systems would be particularly welcomed, as would those with recent industrial experience.

SALARY: £8,462-£10,431 per annum (under review).

Application forms and further particulars are available from the Personnel Officer, Leicester Polytechnic, P.O. Box 143, Leicester LE1 9BH. Tel: (0533) 551551 extn. 2393.

(9601)

EAST ANGLIAN
REGIONAL HEALTH AUTHORITY
Computer Branch

Applications are invited for the following posts which are based at Addenbrooke's Hospital, Cambridge.
Starting salary: Depending on previous experience, could be up to £7,554 per annum.

Systems Designer
For our patient administration team offering a challenging position for an experienced Systems Designer to work on the development of inpatient administration systems for hospitals within East Anglia. The systems are being developed for CTL minicomputer equipment.

Designer/Programmer
For our microcomputing team for the development of microcomputer applications and software and to provide advice and guidance to users on all aspects of microcomputing.

Applicants should be educated to degree level and have two to three years' systems and programming experience.

Application form, job description and further details from the Regional Personnel Officer, East Anglian RHA, Union House, Cambridge CB4 1RF. (Tel. Cambridge 61212, ext. 325).

(9597)

Closing date: June 4th, 1982.

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The Centre is being developed to help meet the rapidly increasing demand for skilled computer personnel in Singapore. It will be charged with the responsibility to train up to 200 students per year to the approximate level of the BEC/TEC HND programme in Computer Studies. ICL and the British Council are working with the Government of Singapore to develop this prestigious Centre, which will be equipped with the latest state-of-the-art ICS 2988 mainframe computer. In the first year the following posts will be required for September 1 1982 or as soon as possible thereafter.

Director
Duties: Responsible for managing the Centre; in particular co-ordination of the activities of all staff, overall responsibility for the development of curricula and teaching materials, advise on staff selection and training and maintain close liaison with major employers of computer personnel.
Qualifications: Candidates should have held a senior post (probably Head of Department) in a British educational institution. They should have particular experience relating to the development of BEC/TEC HND courses in Computer Studies. Employment within, or experience of close liaison, with major computer users would be a definite asset.

Senior Associates
(Heads of Section) (3 posts)
It is proposed that three sections be developed within the Centre; Programming, Computer Architecture and Information systems. Three Heads of Section are required:
Duties: Responsible for: the management of all staff and resources within their section; curriculum development and materials production within their specialist area; advise and supervise recruitment and training of staff and undertake some teaching.
Qualifications: Candidates must have a relevant honours degree and have held a senior post in a British educational institution and have proven ability in the development of HND courses in Computer Studies. Additional skills in areas other than their particular specialisation are highly desirable, e.g. database design, project control, etc. Commercial, industrial or government experience desirable.

Associates
(Various Disciplines (3 posts)
Duties: Responsible for curriculum development and materials production for the programming, computer architecture, information system of database courses (in conjunction with the Head of Section); to undertake teaching and tutorials, liaison with local employers.
Qualifications: Candidates must have several years' teaching experience in a British educational institution and should have been involved in course development for HND Computer Studies. Candidates who have the relevant expertise and experience in more than one area of specialisation will have an advantage.

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Director: Salary negotiable.
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Salary Award due July 1, 1982)

Duties:
To control the analysis, design and introduction of computer systems. The postholder will lead a project team, prepare project plans, give technical assistance to user departments and be involved in the systems programming function.

Experience/Qualifications:
Educated to H.N.D. standard or equivalent with substantial relevant experience. A knowledge of I.B.M. equipment, its operating systems and assembler programming language is essential.

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(Salary: £7371-£7875
Salary Award due July 1, 1982)

Duties:
The duties of the post are to design, write and test computer programmes, taking due consideration of the needs of the user. The postholder will also be required to assist in the instruction of staff of user departments in the operation of the programmes.

Experience/Qualifications:
H.N.C./H.N.D. in Computer Studies and at least two years' experience in Computer Programming. A knowledge of I.B.M. equipment, its operating systems and assembler programming language is essential.

Application forms and job descriptions for the above posts are available from the Personnel unit (Tel. Telford 505051 Ext. 451) and should be returned to the Personnel Manager, Malinslee House, Telford, Shropshire TF3 4K, not later than Monday, May 24th, 1982.

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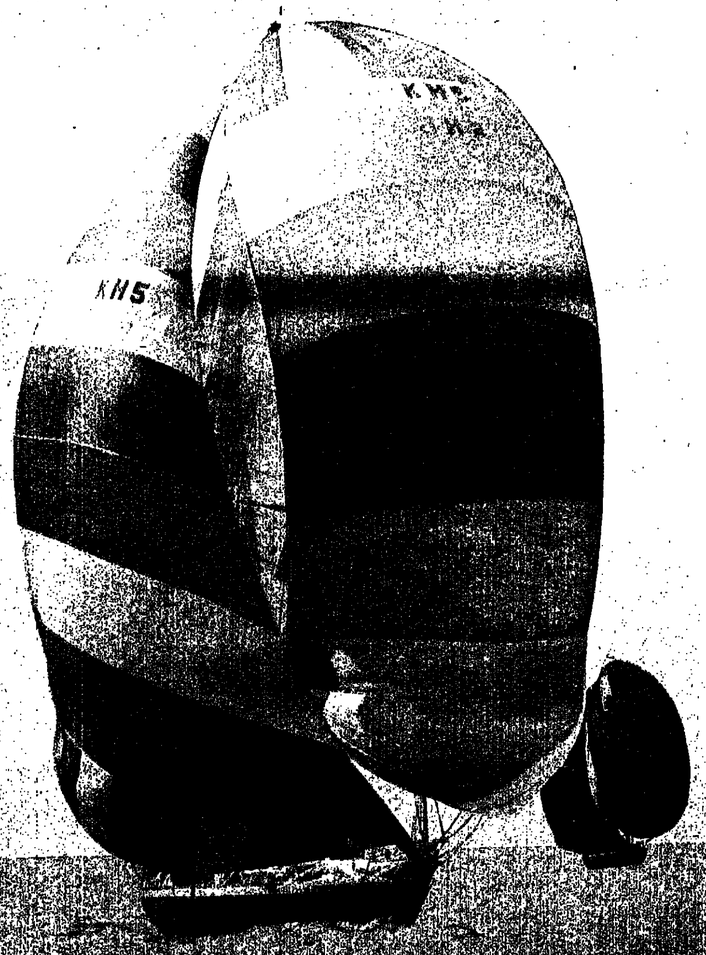

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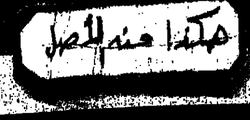

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(6855)

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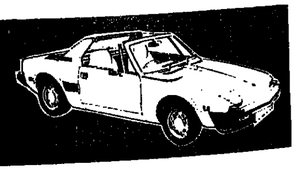

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Since the advent of the general purpose microcomputer in 1974, our Client has grown with the industry and is now the leading independent developer and marketer of software for microcomputers. Our Client has consistently lead the industry with high quality, innovative systems software and 'End User Productivity Tools.'

Our Client's products encompass a wide variety of software from BASIC interpreters to multi-user operating systems. The Company continues to anticipate the market for systems software and is currently moving into the 16-bit micro market with upward-compatible versions of all their established products, complemented by many new and exciting products, designed to take advantage of the 16-bit micro power.

A European software operation is now being established in North Hertfordshire and our US-based Client is seeking a bright, energetic and above average Graduate with a number of years experience in the design and implementation of system software projects on microcomputers. The selected person will assume the highly challenging role of Technical Manager for the whole of Europe.

The person selected will be responsible for support of the Company's products to both OEM's and Retailers and should be familiar with a number of computer languages and operating systems, combined with a knowledge of 16-bit architectures. A knowledge of internal design of languages and operating systems is especially desirable.

Equal emphasis will be placed on the effective handling of customers, where good interpersonal skills are essential. Effectively, the applicant selected will be the Company's sole representative for an initial period, until a full support team is assembled, a process in which the Technical Manager will play a key role. Prior to assumption of the duties as Technical Manager, the successful applicant will spend a period of time in the United States undergoing in-depth familiarisation with our Client's products.

This is a unique opportunity for a outstanding engineer who is keen to play a key role in the development of the European operation of one of the world's leading microcomputer software developers and vendors.

Demands and rewards are high, with starting salaries negotiable circa £14,000 per annum, a company bonus which is paid twice yearly, full use of a quality company car and free health insurance. Prospects for advancement are superb and there is no limit to personal development, based on individual efforts and potential.

To become part of an outstanding success story, contact **Ian Payne** on **021-236 3781** (24 hour answering service) or 0827 282430 (Evenings and Weekends until 9.00 p.m.).

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021-236 3781

NORTH
Blackburn House The Parsonage
Manchester M3 2JA
061-833 0427

BELGIUM
Avenue Louise 327,
Boite 4 1050 Bruxelles
010 322-640 7151/71

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Software and Hardware Development Opportunities

This combination of small successful British company and young dynamic American organisation has an immediate requirement for a number of additional people to work on a range of advanced communications systems.

High Salaries Excellent Fringe Benefits

Voice Response X25/PSS

Software development
Good educational background plus at least three years' Assembler programming and some knowledge of communications, preferably X25/PSS. etc.

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. . . various levels required between 18 months' and six years' experience, including Assembler programming.

Hardware Engineers
At least 18 months' in hardware development. Knowledge of Data Communications, Telephony, Micro-processors or VLSI would be of interest.

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To discuss these opportunities in confidence and arrange an early interview, please contact Myriad at **Reading**. Ref: RT1/1305

Myriad Appointments Limited

30 Fleet Street, London EC4Y 1AA Telephone: 01-353 0981 24 hours
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EUROPE

CONSULTANTS — to £30,000 + Bonus
BUSINESS DEVELOPMENT — BELGIUM and HOLLAND

On-line accounting tools are an ever-increasing market area for software product applications. Our client, a U.S. industry leader, is responding to this market growth by expanding its European operation in order to meet the demand for new on-line products for accountants.

The consultants required must be able to demonstrate extremely high professional and technical standards, along with a strong and competitive attitude towards business development and customer support. At least five years' experience in one of the following areas will prove of interest:

- ★ Financial environment utilising computerised accounting systems
- ★ DP projects developing financial software packages
- ★ Management role within a Business Administration or Customer Liaison software environment.

A degree or equivalent qualification is required; knowledge of Dutch or Flemish will prove advantageous.

DEVELOPMENT MANAGERS — to £30,000
HARDWARE & SOFTWARE — U.K. & EUROPE

Our client, a market leader in advanced real-time telecoms applications in Europe is seeking experienced S/W and H/W Development Managers. The expertise required encompasses many areas, any one area of specialisation may prove of interest:

S/W SYSTEMS MANAGERS
- ★ Real-time project management
- ★ Systems integration and test
- ★ S/W tools developments
- ★ Network specialisation
- ★ Life cycle definition and ass.

H/W AND S/W DESIGNERS
- ★ IBM systems specialists
- ★ L.S.I.
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- ★ Telephony systems

Salaries, benefits and relocation packages offered are exceptional and the prospects for managerial advancement outstanding.

(9689)

Apex Computer Recruitment Ltd
59 Grays Inn Road, London WC1.
01-404 4821 24 hours.

DATABASE DESIGNER

circa £9400

Barclays Bank has a vacancy for a Database Designer to work in the Development Section of its Management Services Department based in Knutsford, Cheshire.

The successful applicant will assist applications projects with database design for IMS DB/DC applications. He/she will also assist in the physical database implementation and provide general support and guidance for the applications projects in the use of IMS/VS.

Applicants should have at least 2 years experience in one or more of the above tasks; practical experience of BTS and MFS would be an advantage. The Bank has just implemented IMS/VS Release 1.2 on an MVS/SP1.3.0 system.

Based on experience a starting salary of circa £9400 is envisaged.

The normal fringe benefits associated with working for a major Bank will apply including a non-contributory pension scheme, subsidised restaurant, excellent sports and social facilities and a profit sharing scheme.

Application Forms may be obtained from:
Ken Colebrook, Manager (Personnel)
Barclays Bank PLC,
Management Services Department,
Radbroke Hall, Cheshire, WA16 9EU.
or telephone
Knutsford (0565 3888 extn 2743 or 2744)

BARCLAYS

(9626)

GMWC

Sales Executives — RUCAPS

★c£20,000 p.a. + car

We are currently looking for experienced computer graphics Sales Executives to undertake U.K. sales of one of our specialist systems.

RUCAPS is a unique computer aided design system specially created for Architects. It is one of the only full scale systems available allowing for frequent and accurate updates. Its absolute consistency, cost-effectiveness, flexibility and user-friendly features make it greatly in demand.

Based in Berkhamsted, you will receive extensive product and Company training. ★We pay an above average basic salary and the commission, based on sales of this highly attractive system, will give you the opportunity to earn c£20,000 p.a.

Sales Executive — AUTOPROD

★c£18,000 p.a. + car

The AUTOPROD system is well known as a system allowing designers *to work in three dimensions right from the start of a* project. We are looking for an individual who already has experience of selling 3-D computer graphics. A minimum of 5 years' experience is essential and your territory will encompass the whole of the U.K.

Full product and company training will be provided and our ★salary and commission package should produce a total remuneration of c£18,000 p.a.

Berkhamsted offers a wide range of schools and housing and the offices are close to a British Rail Station. All vacancies are open to men and women.

If you would like the opportunity of joining a growing company with a young go-ahead outlook please write giving full personal and career details to:

GMWC — THE ARCHITECTURAL COMPUTER SPECIALIST

A. R. Tuck, Sales Director, GMWComputers Limited, Castle Mill, Lower Kings Road, Berkhamsted, Herts. HP4 2AD.

(9482)

New Systems Posts

S.W. LONDON

As part of the expansion of their computer department, Watneys London Limited is offering three challenging new opportunities to proven high calibre technical staff. Working as part of a small systems team in an exciting business environment, these posts demand a self-motivated and professional approach.

The main computer equipment for development projects is Data General; Nova 4X, M600 Eclipse and MV8000 which run under AOS and ICOS. Additional development work is carried out on microcomputers on a number of company sites. A variety of ON-LINE and BATCH applications are to be developed covering all major business areas.

SENIOR SYSTEMS SPECIALIST — c.£11,500 pa

A minimum of 6-8 years of achievement in a Systems Development role is necessary, plus the ability to carry out all stages of project work from initial business investigation through to final implementation. Considerable liaison with management on the introduction of new systems will be required across all areas of the company.

SYSTEMS SPECIALIST — c.£9,500 pa

A minimum of 3 years' experience as a systems analyst is required – preferably in a Data General environment. Experience of the design and implementation of commercial systems in a Production, Distribution or Trading environment will be advantageous. A COBOL programming background is preferred with experience of On-Line systems design.

ANALYST PROGRAMMER — c.£9,500 pa

Applicants must have a minimum of 3-4 years' experience – mainly in programming – but with some practical involvement in technical design and basic systems analysis. COBOL and On-Line systems experience are essential as is at least one year of Data General experience. Expertise in the use of RPG would be an advantage.

In addition to the salaries quoted, Watneys London Limited has an annual bonus scheme, pleasant working environment and a comprehensive benefits package.

Please contact Mrs. M. C. Hannay, Personnel Dept., for an application form:
Watneys London Limited,
14 Mortlake High Street, London SW14 8JD,
telephone: 01-876 3434, Ext. 332.

WATNEYS LONDON

9478

CONCENTRATE on SYSTEMS ANALYSIS in Cambridgeshire

Are you troubled by the pace of life — the turmoil and hubbub of modern living? If you have difficulty in concentrating and can't relax .....

Our client, a well-established and highly successful business, who's manufacturing function 'ENVELOPS' a considerable share of the UK market, now part of the Reed Group, still retains its essential family atmosphere.

The Environment, situated on the original farm which has been carefully preserved. The company's keen commitment to EDP together with the relaxed working environment stimulate total dedication.

The Requirement. If you can offer strong systems analysis experience in a manufacturing environment gained on DEC hardware and previous programming experience in *BASIC+2 with RMS 11 file management system* — then our Client can offer you:

The Opportunity to liaise closely with the user departments at the Regional Development Centres throughout the county and provide the necessary interface between them and the Software Development team.
You will be involved with development of new manufacturing systems. Initially preparing the requirement documentation and checking that the submitted specifications accord with these requirements. You will report directly to the Systems Manager.

The Package. If you are willing to relocate to rural Cambridgeshire, our Client can offer a very generous and comprehensive package for assistance to include:

ALL legal fees and expenses
PLUS a disturbance allowance for incidentals
PLUS annual salary circa £11K

For more information on this substantial career move — contact PETER JEZEPH on CAMBERLEY 64252 or write enclosing a detailed C.V.

TRIDENT COMPUTER SERVICES, PLC
THE PARADE, HIGH STREET,
FRIMLEY, CAMBERLEY, SURREY.

TEL: CAMBERLEY (0276) 64252

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(9640)

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SENIOR PROGRAMMER/ANALYSTS

Up to £10,500 p.a. plus relocation in Leicester or Wokingham.

Safe Computing is a leading U.K. Software house with the future very much in mind having recently restructured its operations to meet a period of planned growth.

A member of the Chubb Group of Companies Safe recruit only the highest calibre staff. The advertised positions are only open to applicants with a sound D.P. background and not less than 2 years experience. Knowledge of ICL System Ten, System 25, Production Control and Assembler would be advantageous but not essential as full training will be provided.

If you wish to join a highly motivated and dedicated team involved in both package and customer development, please send full career details to date to:—

John Everington,
Product Development Manager,
Safe Computing Ltd.,
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Computing Services Association

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(9582)

Targa

CITY — ANALYST PROGRAMMERS — £10-14k + MORTGAGE

A City-based Bank require an Analyst/Programmer to complement their small, highly active Systems and Programming team. A knowledge of banking systems gained in an AIMS, BASIC + 2 or COBOL environment is needed and experience of Integrated Data/Word Processing systems would be particularly advantageous. This is a first-class opportunity to widen your career and enjoy a particularly generous salary and benefits package.

S. HERTS — TECH MANAGER + PROGRAMMER — to £11,500

Our client, heavily committed to development with twin PDP 11/70s, has vacancies for a Technical Manager and a Technical/Applications Programmer. Future projects include development of Distributed Data Processing facilities and a Communications Network. Both positions require at least 2 years' programming experience with BASIC + 2 under RSTS/E and a technical understanding of the RSTS/E system, particularly relevant for the Managerial position. A fully comprehensive benefits package supplements the basic salaries.

LON — ANALYST PROGRAMMER — c£10,500

An outstanding opportunity has arisen within a newly-formed installation running an IBM 4331 utilising CICS-COBOL and DL/1. For the successful applicant this represents an ideal chance to really contribute at the early stages of systems development within a small team. Our clients will appreciate a mature and flexible approach to work and ideally some experience of the relevant software.

W. LON — ANALYST PROGRAMMERS — to £10,000

Several situations have been notified recently around WEST LONDON for IBM COBOL programmers and Analyst Programmers. From 18 months' upward experience is required and 3 of the sites offer training in CICS and DL/1. A general Commercial or Financial backround would be advantageous for applicants seeking a new environment in which to expand their skills.

WEST LONDON BORDERS — ANALYST/PROGRAMMERS to £10,000

An opportunity to take a prime role in the design and implementation of major on-line systems is provided by an expanding West London manufacturing company. The requirement is for Analyst/Programmers with around 3 years' ICL COBOL and experience of on-line working. The projects include providing a nationwide Distributed Data Processing network, centred on ICL ME29 equipment for the company's manufacturing centres.

RPGII — £8-£11,000

We still have a wide variety of clients needing experienced RPGII or RPGIII people. Openings exist in the City, West End and Home Counties for Programmers or Analyst/Programmers working in a wide range of application areas. The companies include BANKS, CONSULTANCIES, RETAIL CHAINS and MANUFACTURERS. Whatever your background and experience it is likely that we will be able to help you get more out of it.

TARGA COMPUTER SERVICES
6 LIVERPOOL STREET
LONDON EC2M 7NH
01-283 9941
10 Lines — 24-HOUR ANSAPHONE

(9500)

CITY OF WAKEFIELD METROPOLITAN DISTRICT COUNCIL
WAKEFIELD DISTRICT COLLEGE
Computer Studies Sector

Lecturer I in Computer Studies — £5034-£8658

Applicants should have a background in commercial computing with experience in computer operations, programming and systems analysis. Some experience in word processing and the application of microcomputers in business would be an advantage. He/she will be expected to teach a wide range of courses including BEC/TEC, GCE 'O' and 'A' levels and TEC.

Lecturer I in Computer Studies (1 year fixed term) £5034-£8658

Applicants should have good industrial/commercial experience in data processing and high level programming. He/she will be expected to teach to a range of courses including BEC/TEC Diploma, TEC Diploma, GCE 'A' and 'O' level and Business Studies.

Lecturer I in Computer Science — £5034-£8658

Applicants should preferably have industrial/business experience in computing together with qualifications in the field of Computer Science. Experience in microcomputer applications would be an advantage. The successful candidate will be required to teach Computer Science and allied subjects mainly to GCE 'A' level and TEC courses.

For further details and application forms, please send stamped-addressed envelope to the Chief Education Officer, 8 Bond Street, Wakefield. Completed forms should be returned within 14 days of the appearance of this advertisement.

(9595)

Faculty of Science
Department of Electrical, Electronic and Control Engineering

READER/PRINCIPAL LECTURER
IN MICRO-PROCESSOR ENGINEERING
Salary: £11,298-£12,591 bar £14,238 p.a. (Under review)

Due to major departmental developments in the industrial applications of micro-processor systems a post of Reader/Principal Lecturer has been created to provide for the leadership and development of this important area of work.

Applications are therefore invited from highly qualified candidates who have a proven record of successful industrial collaboration, attraction of external funding, personal research, research supervision and a sound in-depth knowledge of the design of micro-processor systems for industrial applications.

An application form and further particulars may be obtained from the Personnel Officer, Sunderland Polytechnic, Langham Tower, Ryhope Road, Sunderland SR2 7EE or Telephone: Sunderland 76231 ext 11. Closing date 4th June, 1982.

(9603)

SUNDERLAND POLYTECHNIC

ENTERPRISE ADNET LIMITED

Is a company specialising in developing and operating system for the advertising industry and in particular the independent television network.
The company is now seeking an experienced

SYSTEMS MANAGER

to take charge of its DEC based systems and a Nationwide Communications Network, both of which are expanding as part of a large scale project of conventional and Viewdata Systems.
The individual must have Management skills, be experienced in project control including job costing and have the ability to design and develop advanced systems in the fast moving business of television advertising.
A knowledge of RSTS/E, RMS-II as well as communication networking would be advantageous. The work also involves advising on Technical Matters including the acquisition and installation of equipment and pursuing new developments with equipment manufacturers and suppliers.
An attractive package will be negotiated and applications should be made to:

J. J. Frazer,
Enterprise Adnet Limited,
25 Burton Lane,
London W1.

(9663)

CORBY DISTRICT COUNCIL

require an

Analyst/Programmer

Salary £6501-£8733

Corby, England's first Enterprise Zone Authority, is looking for a person with enterprise to help the computer team (working on an ICL 2904 computer) to achieve a recently agreed 4 year development programme. Whilst knowledge of local government systems would be useful, more important is experience of ICL, COBOL, RPG II, FIND and On-Line system working, together with the capability for hard work.

Starting salary will depend on experience.

Rented housing accommodation is available with a generous relocation package payable in appropriate cases.

For further information and application form please apply to the Manpower Services Section, Civic Centre, George Street, Corby, Northants or telephone (05363) 2551 ext 12. Closing date 11th June, 1982.

(9621)

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Software! Software! Software!

£7,000-£12,000
plus generous relocation expenses and benefits . . .

MICRO PROGRAMMERS
B.Sc. min. 1 yr. micro programming exp. using Assembler and/or PLZ with either or Z80, 8080, 8085 & 6800 exp. Some hardware exp. advantageous. Positions at several levels. £7,500-£10,500.

SNR. SOFTWARE ENGINEERS
Exp'd. real-time Progs., B.Sc., 4-5 yrs. high level prog. exp. req'd. for management potential vacs. Involving simulating work on high level computers, advanced structural dev., debugging packages, automatic prog. generation. To £11,000.

SOFTWARE PROGRAMMERS
Progs. with B.Sc., min. 1-2 yrs. PDP or DG Nova exp. using either or Coral, Macro, Assembler or Pascal (RSX or RTII op. sys. exp. advantageous) req'd. for telecomms, computer peripherals & CAD projects. Positions at all levels. £7,000-£12,000.

SOFTWARE ENGS.
Process Control
B.Sc., min. 4-2 yrs. DEC, modcomp, DG or TI exp. writing systems in Assembler or Fortran req'd. for micro based systems in paper making & energy sys. fields. £7,500-£12,000.

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BOURNEMOUTH (0202) 292155
Evngs. (0202) 825408 (Agy.)

9618

UNIVERSITY COLLEGE LONDON
FACULTY OF CLINICAL SCIENCES

COMPUTER PROGRAMMER A/SYSTEMS ENGINEER

required for the computer group which provides the computing services for the Faculty. A reasonable knowledge of hardware and some software experience sufficient for *maintaining the following equipment* will be expected. A Cambridge Ring comprising a PDP 11/34 with 70 M bytes of disc storage, running UNIX with a terminal calculator supporting a number of micro processors. A PDP 11/10 running RT 11 acting as an R.J.E. to the ULCC computing facilities. Opportunities exist for research and development in relation to the Local Area Network being developed on the Cambridge Ring.

Salary scale — £5,542 to £8,488 plus £1,035 London Weighting.

Apply in writing to Personnel Officer (Technical Staff GP1), University College London, Gower Street, London WC1E 6BT.

(9519)

DATA PROCESSING MANAGER

We are a large multi site subsidiary of a major international group. We are currently converting our centralised computer facilities to a distributed system and require a Manager to head the department.

The successful candidate will be aged 25-35 and have experience of controlling a busy department using advanced telecommunication techniques.

The salary and fringe benefits reflect the importance of the position.

Please write giving brief career details to:

THE FINANCIAL CONTROLLER
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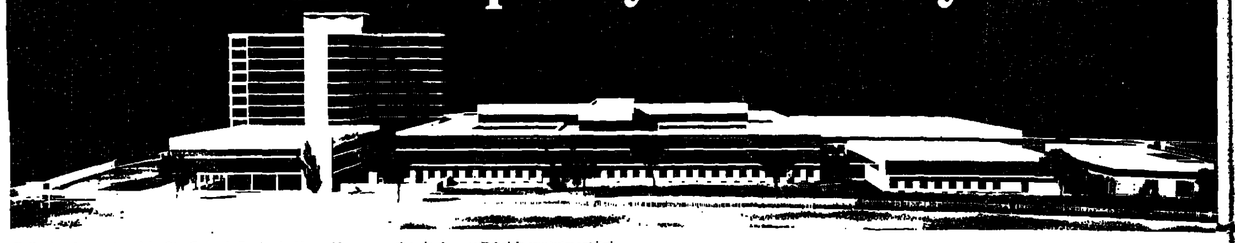
(9129)

MERSEYSIDE JOB OPPORTUNITIES

Computer companies pitch their power on the quality of Mersey



Following the opening of the Giro Centre in Bootle, the Merseyside area was tipped to become Britain's computer capital.

by Chris Youett

THE Merseyside area has one of the largest concentrations of DP power in the UK and at one time was tipped to be the country's computing capital, following the opening of the National Giro Centre at Bootle.

Many of its industries are manual or craft based and this is reflected in the type of applications currently being run. The insurance market also makes a major impact on the Merseyside DP scene.

Up the M6 at Warrington, famous for its vodka and Rugby League team, is the site of Data General's European engineering training centre.

The 40,000 square-foot centre runs courses lasting from three days to five weeks and handles service engineers who have no knowledge of the computer industry, through to experienced staff who have just joined the firm.

In the two years it has been open, the centre has run 5,300 student weeks of training in hardware and diagnostic software. Samples of every type of kit Data General currently maintains are also to be found at the centre.

Manager Colin Cowie said: "We moved to Warrington because of its accessibility by rail, road and air and because the UK is the largest of our European subsidiaries. So it makes sense to ensure the most people have the least distance to travel.

"The facilities offered by Warrington Development Corporation were also important. They are a very positive outfit," Cowie added.

One of the trendier ideas of the 1960s was the New Town concept of moving people and their jobs out of inner city slums to greenfield housing and industrial developments.

In some cases, this has seriously backfired and Skelmersdale – the New Town for Liverpool – now has nearly 25% unemployment. However, the Co-op Bank was also faced with having to move out of the big cities if it wanted to build a large installation to handle all its UK and international business.

The installation, formally opened by Denis Healey in 1980, is the largest employer of clerical staff in the area and has created 600 new jobs.

The main objective of the installation is to give more local autonomy to branches by centralising repetitive work and thus freeing bank staff to deal with their customers.

In addition to rooms full of OCR readers, it has twin IBM 3031s, a 4341 for consumer credit and a System 38 to handle Handycard accounts. This work was formerly done by Barclays.

The centre also produces most of the letters which the branches send out to their customers. There are nearly 40 standard letters which are personalised by the clerks there before being printed.

The computers also handle statements, cheque books, opening of accounts, standing orders, customer records, cheque guarantee cards and cheque clearing.

The centre is examining the use of viewdata and EFTS in the banking world. The viewdata pilot scheme is initially looking at ways of giving branches larger volumes of data which do not need to be sent immediately – for example, management circulars and detailed credit status reports.

Although nationally EFTS is still at the talking stage, the Co-op is looking at online credit authorisation as a first step towards eliminating many of the cheques in circulation. Obviously, the retailers have got to agree on a standard first.

In the heart of Merseyside at the Port of Liverpool building is software house Fraser Williams. This company was set up in 1969 with some capital coming from the insurance industry. It has averaged 30% growth a year since formation and was the subject of a management buy-out.

Although it is an OEM for nine manufacturers – including DEC, Data General, Hewlett-Packard and Texas Instruments – the company is unusual in that it has a policy not to make any profit on the hardware sales.

This is because the house believes it is more important to sell decent software to the end-user, it says.

An application which one user says is largely responsible for keeping him in business is an integrated garment industry system.

The user, Sutcliffe Melbourne of Hebden Bridge, has TI kit running under the DX10 operating system. The whole package costs over £100,000, but the company estimates that it has reduced its stocks by more than that amount in the first year.

Geest developed the original ledgers and the software took 18 months to develop. It covers productivity parameters, order processing, material control and purchasing.

Fraser Williams also markets a package to assist the development of drugs and chemicals for the pharmaceutical and agricultural industries. It is working at 30 sites in the US, Japan and Western Europe.

In the insurance market is software house BCT of Garston, which has introduced a re-insurance package aimed at the takers of insurance on property and consequential losses.

The screen-based menu driven package handles statutory returns, underwriting, reporting and agents/brokers accounts.

BCT also does packages for steel plate stockholders which builds up a database of stock to try and reduce off-cuts; for Christmas hamper firms to control buying requirements, commission paid to agents, sources of orders, breakdown of advert responses and sales; and for warehousing which automatically produce invoices for rental space.

OPPORTUNITIES FOR DATA PROCESSING PROFESSIONALS TO DEVELOP THEIR CAREERS IN THE UNITED STATES

Base: NEW YORK CITY **Salaries: $25,000-$45,000**

We have been retained by one of the leading property and casualty insurers in the United States who seek experienced computer and systems professionals to join their rapidly expanding organisation. The Company offers an innovative, dynamic multi-project environment in their state-of-the-art Data Processing Department. Many projects are already underway–with more scheduled in the area of policy writing, statistics, claims, financial management and investment. Joining them can mean an opportunity to participate in project planning, injecting your own ideas, directing others and following through projects from design to implementation. The Company offers challenging assignments in systems design and programming for their MIS, technical services and telecommunications departments. Knowledge and experience in some of the following areas is required, IMS/VS, DB/DC, OS/VS JCL, ADS Data Dictionary and communications concepts, COBOL, TSO and Assembler. If you have financial or insurance applications experience this would be an advantage.

Some of the positions and experience required are:–

SYSTEMS CONSULTANTS
$35,000-$40,000
- feasibility studies & audits
- advanced design & programming techniques
- design & implementation of complex systems
- COBOL programming knowledge

SENIOR PROGRAMMER/ANALYSTS
$28,000-$36,000
- IBM mainframes
- OS COBOL programming
- design of large scale & complex systems
- project lift cycle methodology

SENIOR PROGRAMMERS
$21,000-$28,000
- IBM mainframes
- minimum three years' complex programming
- on-line systems CICS or IMS

PROJECT MANAGERS
$37,000-$45,000
- administration & technical responsibilities for development or modification of application systems
- experience in design and implementation of large scale or complex systems
- familiarisation with de-bugging techniques
- OS JCL and COBOL
- minimum eight years' experience

SPECIALIST PROGRAMMERS
$25,000-$29,000
- ALC & COBOL (also desirable JCL, TSO, SPF, TSO/MON MARK IV)
- maximum two years' programming experience

PROJECT SUPERVISORS
$35,000-$42,000
- systems programming in IMS/VS
- ALC, IMS terminals control block structure & systems flow
- two years' systems programming plus two years' IMS

Our client is recruiting you onto its direct staff and will sponsor and secure visas, relocate you and offer an excellent compensation and benefits package to match these exciting opportunities.

Recruitment for these posts is being directed by HEFFELFINGER ASSOCIATES INC., an experienced U.S. Executive Search and Recruitment Service in association with DPSC INTERNATIONAL, Europe's largest computer search organisation.

Initial interviews will be conducted in London and convenient regional centres throughout the United Kingdom. Please contact us, in confidence, and explore this opportunity:

Apply to: Helen J. Stiven by telephone: London (01) 540 8311 (24-hour service) or in writing, sending curriculum vitae to:

DPSC INTERNATIONAL LIMITED
Crown House, Morden, Surrey, SM4 5EU.

[06311]

MERSEYSIDE
HEYWOOD & PARTNERS LTD.

EXPERIENCED ANALYST/PROGRAMMERS AND PROGRAMMERS

BASIC PLUS AND RSTS/E EXPERIENCE ESSENTIAL

The Positions
Experienced analyst-programmers and programmers are required to work on a variety of financial systems in development and implementation teams.

The Company
Heywood & Partners are a well-established and thriving computer services company. Besides developing and installing commercial packages it has an extensive bureau service.

The Computers
The work will be on Systime and DEC mini-computers. Heywood & Partners also have their own ICL equipment and use other mainframes.

The Conditions
As well as a competitive salary there is a non-contributory pension scheme, flexible working hours, and an annual bonus. The Company has a clear policy of promoting and rewarding people who contribute to its success.

If you would like to apply then write, giving details, to:
Systems Manager, (Recruitment), Heywood & Partners Ltd., 30 Exchange Street East, LIVERPOOL. L2 3QB.

[9810]

Victoria Appointments Ltd
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[9830]

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[9820]

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SDM

[9811]

THE ST HELENS COLLEGE OF TECHNOLOGY
Principal: C. P. Gray BA, DMS, MBIM
DEPARTMENT OF PURE AND APPLIED SCIENCE

Lecturer I in Data Processing
Salary – Lecturer I Scale – £5035-£6858

Candidates for this post must be able to teach programming in BASIC and will be expected to be familiar with COBOL or RPG II. A knowledge of machine code programming would be an advantage.

The successful applicant will join a specialist team of five staff and will share the teaching of Data Processing up to Higher Certificate level.

Requests for application forms and further particulars should be in writing please, and enclosing a stamped addressed envelope, to: The Principal's Office, The St. Helens College of Technology, Water Street, St. Helens, Merseyside, WA10 1PZ. Application forms should be completed and returned within 2 weeks of the appearance of this advertisement. Please quote Ref. 37/DP.

[9811]

THE UNIVERSITY OF LANCASTER
COMPUTER SERVICES

SYSTEMS PROGRAMMER

Computer Services require a Systems Programmer to support major developments in the University's Central Computing Service, both on the existing ICL2960 and on a new interactive computer system to be installed shortly.

Applicants should have a degree or equivalent qualification and possess experience in operating systems whilst a knowledge of communications systems would be advantageous. Salary will be on the Other Related Scale 1A for University Staff (£6070-£8067) but an honours degree or equivalent will attract a salary on the Other Related Scale 1B (£6858-£8067).

Further particulars may be obtained quoting reference 82/49 from the Establishment Officer, University House, Bailrigg, Lancaster, LA1 4YW, to whom applications (five copies) should be sent not later than 4th June, 1982.

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Applicants must be prepared to take considerable responsibility and to appreciate the principles of the system and software in use. Experience of Sigma/Prime equipment is not essential, but knowledge of a terminal network would be an advantage.

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[9808]

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[9812]

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Woolston, Warrington
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[9813]

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Faculty of Business and Management

SENIOR TECHNICIAN 'B' (PROGRAMMER) (T4)

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Applicants should have at least one year's experience in programming in a commercial and/or scientific language and possess an HNC or equivalent or higher qualification. Knowledge of DEC hardware and software would be an advantage.

NJC Salary and Conditions: T4 £6,501-£7,137 per annum.

For further details and application form, returnable by 4th June, 1982, please call our 24-hour telephone answering service (0632 323126) or send a stamped addressed envelope to the Personnel Officer, Newcastle-upon-Tyne Polytechnic, Ellison Building, Ellison Place, Newcastle-upon-Tyne NE1 8ST.

[9834]

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LONDON SE1 8LE

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[9813]

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For an Application Form and Product Range Information sheet, call 01-235 4835 (anytime day or night, 7 days a week) and leave your name and address. Alternatively, please write detailing your career and equipment experience to: Peter Gorton, Personnel Officer, WANG (UK) Limited, WANG House, 661 London Road, Isleworth, Middlesex, TW7 4EH.

WANG

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(9483)

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(9650)

Wilkinson Transport

Systems Programmer/ Manager

For Scientific Applications £11 – 14K

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- control and maintain the VAX system
- provide a programme development service
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In order to successfully achieve the required levels of service, candidates, male or female, with a scientific background will be able to demonstrate relevant experience in at least one of the above areas, a familiarity with DEC/VAX systems architecture and operating systems, and an understanding of MACRO and ASSEMBLY Language concepts.

Career prospects are good in an organisation that has several autonomous profit centres in the UK and other international sites, with a consistent sales growth record approaching 25% per annum.

A comprehensive relocation package is available, including interest free bridging, together with profit sharing, non contributory pension and other attractive benefits.

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Raychem

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METRA INTERNATIONAL has a strong and growing reputation in such fields as turn key systems, high level technical consulting and EDP strategic planning. Staff work on a wide range of assignments mainly for Government and leading national and international companies. To underpin its growth, METRA INTERNATIONAL seeks a number of well qualified specialists in 3 areas:

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- telephone switching systems specialist
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With at least 8 years top level experience either with a major international consultancy or with a manufacturer. An MBA together with outstanding first degree very desirable. U.S. experience particularly sought. These consultants will address the EDP strategic needs of major multinational corporations.
Location : London and Paris.

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Paul C. TODD - METRA INTERNATIONAL, St. Mary's House, 42 Vicarage Crescent, LONDON SW11 3LB - Telephone: (01) 223. 76. 34

(9536)

metra consulting

London c.£15,000

Computer Consultancy

Stoy-MLH is an international management consultancy firm based in London, and is part of Stoy Hayward & Co., Chartered Accountants. Its assignments range the management spectrum from accountancy to marketing; from data processing to production. Computer assignments cover a wide range of business systems, with emphasis on financial and stock control systems and on mini or micro hardware and software.

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Successful candidates are likely to be in their early 30's and either qualified accountants or university graduates. They will be experienced in advising on the introduction of both software and hardware to a wide range of businesses, and able to advise from the feasibility stage through to implementation. Public speaking experience on the subject would be an advantage, as would experience of communications and networking.

Salary will be commensurate with experience and is competitive. There is a contributory pension scheme, and BUPA membership is offered to consultants and their families.

Letters of application will be treated in confidence and should be forwarded with C.V., salary progression and any other relevant information, to Mr G. Henderson, Managing Director, Stoy-MLH, 126 Baker Street, London W1M 1FH.

STOY MLH

Management Consultants

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Contact Alasdair Scott or Peter Hubble (01-734 9776), Roger Pyatt (061-445 0646), or Alan Williams (05432 56612).

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CCAB — COMPUTER CONSUMER ADVICE BUREAU LTD.
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(9652)

COMPUTING SERVICES

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The applicant should have a minimum of two years' experience in Fortran programming and would be expected to show initiative and drive.

The firm's computing facilities include a DEC VAX 11/780 computer, computer-aided draughting and word processing systems.

Please reply in writing giving brief details, quoting reference no. 226 to:

Associate For Personnel
Mott Hay and Anderson Holdings Ltd
20/28 Wellesley Road
Croydon CR9 2UL

9523

Mott, Hay & Anderson
International Consulting Engineers

MEDICAL RESEARCH COUNCIL
INSTITUTE OF HEARING RESEACH

SCIENTIFIC APPLICATIONS PROGRAMMER

The Medical Research Council has a vacancy for a Scientific Applications Programmer at the Headquarters of the Institute of Hearing Research on the campus of the University of Nottingham. The Institute performs multi-disciplinary research on hearing and deafness. The person appointed will provide programming support on Mini- and Micro-Computer Systems for a range of scientific projects including Data-Base organisation for epidemiological surveys, and Real-Time interactive control for Auditory experimentation. The appointee will be supervised by a Senior Programmer, and will eventually assume responsibility for the day-to-day management and security of Data on a twin-processor DEC PDP11 System.

Applicants should have a working knowledge of Fortran or an allied language and have proven skills in developing and documenting applications programs. Experience on one of the following areas would constitute an additional advantage: RSX11M MACRO-11, CPM, Z-80 Assembler, Real-time process control; Signal Processing; Data-Base Management. An appointment will be made on the Executive Officer scale (£4095-7247) or the Higher Executive Officer scale (£7476-8184) according to qualifications and experience.

Application forms and further particulars should be obtained from Pamela Smith, Administrator, MRC Institute of Hearing Research, University Park, Nottingham, NG7 2RD. (Tel: 0602-223431). Completed applications should be received by May 28th.

9542

THE HATFIELD POLYTECHNIC
School of Engineering

Lecturer II/ Senior Lecturer
In Electronics/ Information Engineering

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Salary: LII £6676-£10644
SL £9837-£11641 (bar) – £12364

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Please quote ref: 497. Closing date: 5 June 1982.

THE HATFIELD POLYTECHNIC

(9471)

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COBOL PROGRAMMER

Based in Dereham, Norfolk and reporting to the Management Services Manager, you will join a small systems/programming team and will be required to work both individually and as a team member for application projects.

The installation comprises a Honeywell level 6/53 with 384K, mass-on-line storage and 14 local and remote terminals. An extensive range of financial systems is implemented and major development of manufacturing systems is in progress.

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Please write or telephone for an application form to: Mr T Norman, Central Personnel Officer, Crane Fruehauf Limited, Rash's Green, Tollwood, Dereham, Norfolk NR19 1JF.
Telephone: 0362 5563 Ext. 3102.

Crane Fruehauf

SALES BIT

Quality of Management – 10

Even salesmen try to swing the lead!

LAST week I wrote about salespeople with business interests outside their mainstream employment: Moonlighting, external commissions, using their husband or wife as a business front, and setting up their own businesses in parallel with current employment. The implications were obvious in terms of lowering sales achievement and equally clear as far as counteraction is concerned – it must not be allowed.

This week I will introduce a close relative of the above: The lead-swinger.

For those light on maritime history I might explain that in bygone days when ships attempted to navigate shallow waters they used a lead-weight on the end of a line to test for the depth of water. This was a simple task requiring little physical effort on the part of the operator, the weight being swung out in front of the ship and note taken of the appropriate mark when the line was in a vertical position.

As the navigation of shallow water was a fairly hazardous business, all able-bodied seamen were obliged to stand at their station in anticipation of emergency action and, therefore, the job of "swinging the lead" was usually given to someone who was only fit for light work.

This became the well-established province of the scrounger and the work-shy and consequently anyone who complained of feeling unwell with no apparent symptoms would be accused of contriving to secure the job of checking for depth – hence, "swinging the lead".

Human nature never changes and the proportion of the population who would prefer to swing the lead as opposed to do a full day's work for a full day's pay is no less now than it was in the days of sail. Similarly, salespeople have no lesser capacity for work avoidance than those in other occupations.

In most sales teams there is usually at least one individual who is not pulling his weight (another nautical term!), or at least will coast along if he is allowed to do so. This is not usually discovered during some blatant act of neglect or laziness; it is more an accumulation of apparently trivial indications creating a feeling that things are not as they should be. The difficulty lies in being able to put one's finger on what the problem really is, or deciding whether there actually is a problem to tackle.

I recall a salesman who worked for me when I ran the sales operation of a large international service bureau. He was an intelligent and articulate man who had gained a lot of selling experience before he joined our company – so much so that he became a kind of unappointed "guru" to some of the younger and more impressionable members of the selling team.

It was this status that brought the matter to a head. The existence of an unofficial sales counsellor for the junior salesmen did not worry me at all – I strongly believe senior salespeople should be encouraged to assist their junior colleagues wherever possible. My real concern was that I didn't feel comfortable with the guy for reasons I couldn't explain.

Because of these doubts I was unhappy about his influence on some of his more vulnerable colleagues. Consequently, I decided to review his past activities and to keep a close eye on him. Previous areas of suspicion all appeared to be trivial.

His company car just happened to consistently do significantly less mileage per gallon than everyone else with identical models. He was the one who always managed to lose his expense receipts. Whenever I tried to make urgent contact with him via his wife he regularly just happened to "pop into the house" at the time I called.

He was ahead of sales quota but his prospect list was slow in developing and he had been endowed with a couple of "bluebirds".

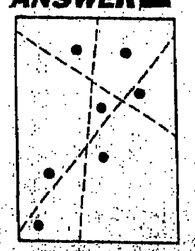
After some poking around I got a much clearer picture of his approach to the job. Every morning he took his kids to school and most afternoons he collected them again. He wasn't a golfer, but was still disinclined to work on Friday afternoons.

Yet his call-reports described a number and variety of client visits that could only have been achieved by someone working a consistent ten-hour day. Of course I sacked him (there was no point in threats or efforts).

After the event I wondered how I could have been such a fool to allow my dauntless altruism to be exploited in such a way and vowed to learn from the experience. However, the real concern that all this brought to my mind was the possibility that I might have been wrong.

There is no factor more likely to degrade the relationship between a manager and a subordinate than the suspicion that the latter is cheating and breaking promises. After all, that's what work avoidance really is.

This is a situation that must not be allowed to develop. Right or wrong, everything has to be brought out into the open, otherwise this emotional cancer will grow out of all proportion with an outcome that must be to the detriment of everyone concerned.

Alan Williams

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